WORKING PLAN

FOR

THE THANJAVUR FOREST DIVISION

1st July 1983 to 30th June 1993

By

Thiru C. V. Kothandaraman, B.A.,

Working Plan Officer

Trichy

Under the Direction of

CHIEF CONSERVATOR OF FORESTS

MADRAS-600 006

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INTRODUCTION

The Thanjavur Forest Division as it exists today comprises Thanjavur Range, Pattukottai Range, Mannargudi Range, Sirkali Range, Kumbakonam Range, Chidambaram Range and Vedaranyam Range. This plan revises the unified working plan prepared by Thiru M. S. Karunakaran, I.F.S.

The Working Plan Division to prepare working plan for the Thanjavur Forest Division, was formed on 1st January 1981. The Reconnaissance Report of the plan was submitted on 11th May 1981. The report was discussed on 30th March 1982 at Conservator of Forest's Office, Tiruchirappalli, which was presided over by Thiru T. Achaya, I.F.S., Chief Conservator of Forests. The plan was prepared in accordance with decision taken in the meeting at the time of discussion and completed on 31st October 1983.

Thiru C. V. Kothandaraman, Working Plan Officer was assisted by the Range Officers Thiruvalargal M. Natarajan, A. Durai, A. Ziaudin Ahamed, S. Balakrishnan, M. Rengasamy and M. Thirugnanam and Foresters Thiruvalargal A. Malayalasamy, D. Pushparajan, K. Venkatesan, D. Dhanasekaran, Arunachalam, K. Nagarajan, S. Thamilmani, Chockalingam, Karunakaran and S. Chandrasekaran in field work and in collection of statistics.

Works connected with giving a finishing touch to the plan like preparation of table of contents, summary of prescriptions and mapping works were completed by me. The assitance exended by the staff of the Thanjavur division is gratefully acknowledged on behalf of the Author. The able guidance of the Conservator of Forests and Chief Conservator of Forests in the preparation of the plan is duly acknowledged with gratitude.

Tiruchirappalli.
10th April 1985.

R. ANNAMALAI,
Forest Working Plan Officer.

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PART I

SUMMARY OF FACTS ON WHICH PROPOSALS ARE BASED

CHAPTER I.

THE TRACT DEALT WITH.

Section I—Name and Situation.

1. *Name.*—This working Plan deals with all the Forests of Thanjavur Forest Division as constituted on 1st September 1956 as per G.O. No. 1584, Food and Agriculture, dated 20th June 1956. This will be known as Thanjavur Division Working Plan.

2. *Situation.*—The Forests areas covered by this plan including the avenue and compact plantations raised on the banks of rivers and canals, etc., lie scattered over the entire Thanjavur revenue district.

3. The division is bounded on the north by colroon river which seperates it from Tiruchirappalli and south Arcot district, on the east by the Bay of Bengal on the south by the Palk strait and Aranthangi taluk of Pudukottai district and on the west by Tiruchirappalli. The entire tract lies on the east coast of Tamil Nadu between 10.15" and 11.35" north latitudes and 78.15" and 79.51" east longtitudes.

Section 2—Configration of Ground.

4. The characteristic feature of the forests of this Division is that they are restricted to a large number of widely scattered blocks of varying size and importance the tract may be divided into the following groups to facilitate easy descriptions :—

(*a*) The Plain forests.

(*b*) Padugais and poromboke.

(*c*) The coastal forests.

5. *The plain Forests.*—They comprise of all the Ex-zamin forests, Ex-zamin forests such as Komapuram R.F., Ettiathalai Forests, R.L. Kurumbur R.L. Neppugai,Senthangudi Melpanaikadu have been leased out to Tamil Nadu Forest Plantations corporation with effect from 1st August 1974 except Avanam. The terrain is an open plain, sloping towards the east and devoid of any hills. South and South-west of Thanjavur the country rises and forms a small plateau known as Vallam table, land, broken by small ridges of grits and sand stones. The plain forests are very much scattered and discontinuously distributed over the dry inland country supporting thorny scrup jungles only. Most of the cashew plantations of this Division are stituated in this type of fores ts.

6. *Padugais and Porambokes.*—They are on the banks of Cauvery and coleroon. The Padugais and porombokes contain mostly Casuarina Plantations. They are Maharajapuram, Sodaikudi, Gopalasamudram, etc., All along the course of Cauvery and its distributaries on both the banks, numerous narrow strips of river porambokes lands called the 'Padugais' occur cut up by countless patta lands. These strips ranging in width from about 3 metres to 100 metre (approximately) are made up of bits of anything from 0.15 ha. to 10 ha. Erosion of the lands taking place steadily year after year especially during the floods and enqulfed large slice of these lands which have become part of the beds especially at Maharajapuram. No measures have been taken to stop the recurring menace except when the floods tanks are threatene. In many place poramboke lands have been washed away. Even though the Padugais and poromboke lands are dry they are very fertile. Flood banks of Cauvery and its distributaries are away from the water courses in the upper reaches where the river is wide and are closer in the lower reaches where the rivers become narrow radually. Throughout the coleroon there are well maintained flood blanks, The poramboke lands along these flood banks are generally sandy owing the floods, when huge qualities of sand are deposited on these lands. Areas having good soil are rare and as such there are no superior type of vegetation.

7. The Padugais and porambokes contain mostly Casuarina plantations, They are Maharajapuram, Sodiakudi, Gopalasamudram, etc.

8. Teak is planted on the Padugais and poramboke lands along the banks of the Cauvery and its distributaries, the coleroon and Vennar river, etc;. They are small and seattered far and wide. The belt of land available for planting along the river and canal margins is geneally very narrow

permitting either one row or two rows, depending upon the width of the available land. In certain localities however compact areas of greater or lesser extent of Padugai land are available for planting. Unfortunately much of the banks are too narrow or completely eroded away or unsuitable for growing teak. Further some of the Padugai lands are under encroachment for a long period.

9. The Padugai and porombokes contain the majority of avenue and compact teak plantation of Thanjavur Division.

10. *The Coastal Forest.*—The Coastal Forest lie in the Cauvery delta along the coast in Sirkali, Vedaranyam, Thiruthuraipoondi and upland portion of Pattukottai, Thuraikadu R.Fs. etc.,

11. The Coastal region have neither hills or hillocks save the ridges of blows, sand which fringe the narrow strip of beach along the coastal and contains the Casuarina plantations, Sand dues the Mangroves, etc., The Coastal forests comprise of the Casuarina plantations of Pudupattinam. It include Talainayar, Muthupet, Thuraikadu reserved forests in addition to the Pudupattinam Mangroves. The Vedaranyam salt swamp which is the longest swawp in Tamil Nadu runs along the coast from Point Calimere westwards to Muthupet. The major portion is covered by extensive lagoons and str ams in Talanaiyar, Muthupet and Thuraikadu reserved forests, the wooded are not more than 5 to 10 per cent of the total area.

12. Kodiakadu is a dry every green type of forests situated in an undulating sandiy plain almost at sea level and intersected by many broad but shallow swamp creeks. The creeks are generally dry except when the mansoon winds in June to August force up the sea water into them through the back water. The wooded area of this forest is only about 40 to 50 per cent (Approximately) of its gross area, the remaining portion being covered by grassy blanks and shallow saline swamps. The forest, however effectively protects the villagers of Kodiakarai Kodiakadu and the Vedaranyam salt factory from severs sand drifts which but for it, would have overhelmed them.

13. The Talainayar reserved forests occupies 1236.29 ha. but its wooded area is only about 6 percent of the total area, the next being open space with Umri shrubs scattered about it. It is a man grove forests land locked, liable, to submersion in the ranks and broken up by numerous creeks a large central lagoons of the Adappar. The rivers Adappar and Nallar run through this forest It's soil is alluvial saline and slushy throughout.

14. The Muthupet reserved forest occupies 6803.01 ha out of which only about 4 per cent (approximately) are occupied by trees, the rest being covered by streams, lagoons and swampy and greassy blanks. Like Talainayar it is also a mangrove forest with slushy soil which is specially treacherous along the sea shore. It is traversed by several large lagoons and streams of which chief are Paminiar, Koraiyar, the Kilanthangiar and the Valavanar.

The Maravakadu and Vadakadu R.Fs. occupies 1676.35 ha. Out of which 1163.75 ha. has proposed to lease out for salt pans, for which the Chief Conservator of Forest has addressed the Government fixing up the land value at Rs. 1,000 per ha. The Government has directed the Managing Director of the Tamil Nadu Salt Corporation in this letter No. 24220/M/A11/79/28, dated 12th February 1981 to have a join Inspection of the area, due to the difference in the proposesd area. The soil in this are is saline slushy.

15. *Drainage.*—The division is drained by a number of rivers. The rivers almost all of them flow to the east into the Bay of Bengal. The most conspicuous features of the District, is the river cauvery with its branches. The head of Cauvery delta proper is located at the Upper Anicut, where the cauvery bifurcates into coleroon on the north and southern tributory retaining the name of Cauvery. After 25 Kms the Coleroon which is a Chief source of drainage takes a north easterly direction skirting the district along its entire length on the north and enters the sea and carries the bulk of the flood water. The cauvery takes a southern directions splitting up into numerous branches and covers the whole of the delta with a vast net work of irrigation channels. Some of the branches of the Cauvery find their way into the sea carrying with them all the surplus water discharged by the drainage.

16. At Grand Anicut about 28 Kms. below the Upper Anicut the coleroon and the Cauvery very nearl mee forming what is kuwon as Srirangam island. Thesurplus drainage channel from the GrandAnicu to the Coleroon completes theformation of this land.This anicut built about1,500years back across the Cauvery by the early Cholal saves the delta from floods by its ability to discharge the surplus waters of the Cauvery into the Coleroon, At Grand anicut Cauvery branches into two main rivers the Cauvery on the north and the Vennar on the south at the heads of each of which egulator has been built. The new canal excarated under the Cauvery Mettur project called the rand anicut canal also takes off from the same site, lower down the Cauvery again gives off a

branches on the south called theKodamuritty river atThirukattupalli where there are also two regulators. The Vennar bifurcates into two branches called the Vennar on the south and the Vettar on the north at a place about 16 kms. west of Thanjvur where Vennar Vettar rgulator is situated. These main branches of Cauvery divide and sub-divide into innumerable distributaries forming a net work of canals and channels providing the means of irrigation for the entire delata. Someof the branches of theCauvery find their way into the sea carrying with them all the surplus water discharges by the drainage of the wet cultivation while others get last in the vast expanse of paddy fields. The Cauvery itselef now reduced to an insignificant channels joins the sea at Kaveripattinam about 12 Kms., norh of Tranquebar.

17. The Kodamurutty after flowing through Thanjavur and Papanasam taluk enters the Nannilam taluk with the changed name of Solaisudamaniar beyond the Puthar-Solaisundamaniar regulator and eventually joins the Vettar. Between Kodamurutty and Cauvery the latter has woven into an intricate web of canalswhich includes 12 main distributaries besides innumerable channels which take water directly to the wet lands from the grand Anicut,to the sea, the total length of the important distributaries are Veerasolanur, Manjalar, Mahimalyar, Arasalar, Nallar, Nattar Vanjiar, Keerthimanar, Kodamurutty Puthar, Velappar, Mudikondan and Thirumalairajan. There are Adappar Uppanar and Koraiyar, Paminiar etc., which serve as drainage of surplus water at the tail end.

18. The Coleroon after forming the island at Srirengam whence its way in a north easterly direction and through out its length of flow forms the natural boundary between the districts of Thanjavur on the south and Tiruchirappalli and South Arcot on the North 110 Kms. below the Upper Anicut the river is spanned by a regulater known as the Lower Anicut built across her two branches. Here Ponneri, North Rajan and Vadavar channels take off from the northern flank and irrigate lands in the Udayarpalayam taluk of Tiruchirappalli district and Chidambaram taluk of the South Arcot district. From the Southern flank South rajan channel takes off and this is utilised for irrigation in Myladuthurai and Sirkali taluks of Thanjavur. No more use is made of the river further down serve as drainage and it enters the Bay of Bengal at Devikottai with very little water except during floods.

Section 3—Geology, Rock and Soil.

19. The geological formation of Cauvery delta is very simple since fluviatile alluvium presenting variations in its composition on different parts, constitutes its entire structure. In the more western portion of the delta the alluvium partakes more of rich loam sometimes in the form of fine reddish silt and sometimes of blackish clay but often of pale clayey mud which gradually diminishes towards the coast until it is lost in the blown sands of the coast. The upland portion of the district excepting the country round Pattukottai is occupied by lateritic rocks These rocks meet the fluveatile alluvium at the western extremity of the district not from the south bank of Cauvery but the belt of alluvium widen as it runs eastwards, while the lateritic areas gradually narrow until some thirty kilometers south east of Thanjavur they disappear beneath the alluvium. Another branch of them travels in a straight line from Thanjavur as far as Pattukottai country and east warm until it meet the marine depo its near Pattukottai as it approaches the sea. Near Gandarvacottai on the Pudukkottai border are found Cuddalore sand stones which are hard, heavy and over laid by gritty varieties of the same rock having different colours like motled pale purple yellow and rusty red.

20. Only small quantity of iron ore is found in the latertic rocks near Vallam. Vallam is well known for its stones the Chief varieties of which are the pellucid rock crystal, the dark brown or smokey quart the yellow cairgorn and amethyst. These are cut by lapidaries of Thanjavur into a variety of ornaments and trinkets, beads and spectacle lenses. There too are found pebbles of quartz and quarsite embedded in Cuddalore sand stones which are generally some what, brittle but the better quality of which can be used with advantage in hull mills to grind materials that would not be affected by contamination with silica. Laterite of good quality occurs at Vallam. When first extracted, it is a flaky ferruginous sandy clay, rather friable but when exposed for some months to the action of the sun and rain becomes hard and gets encrusted with a dark, polish of hydrated oxide of iron which protects it from further change and resists decay, however long the stone may be exposed. Sand stones occur near Vallam and Thanjavur which are fit for building Kankar occurs in varying thickness near Alakkudi and west and south west of Thanjavur town which is high in lime burning. Natural gas occurs near Sirkali which can be used for heating or for driving gas engines. Titanium mineral (ilmenite) occurs near Tranqubar Adirampattinam and Nagapattinam in small stretches which can be used for making good quality steel and for manufacturing a high grade opaque, non-corresive point called Titanium while Zircon, a high grade refractory mineral which can be used for making super factory bricks, crucibles, retorts and plastic products occurs as a constituent of the heavy sands along the sea coast of Tranquebar. Yellow Ochre is found spread over small areas West of Vallam and deposits of Sand occur on the Tiruchirappalli border south of the Cauvery.

21. A note on the Geology of Thanjavur district by Thiru Vemban of Geological survey of India is furnished below :—

Introduction.—The Thanjavur district covers an area of 5315.60 Sq. Kms. It consists of twenty taluks namely Thanjavur, Thiruvayar, Papanasam, Kumbakonam, Thiruvidaimaruthur, Orthanadu, Pattukottai, Peravurani, Valangaiman Myladuthurai, Sirkali, Tranqubar, Nagapattinam, Thiruvarur, Nannilam, Kodavasal, Thiruthuraipoondi, Vedaranyam, Mannargudi and Needamangalam.

22. The northern and eastern portions of the district form the delta of the Cauvery comprising of the whole of Kumbakonam, Myladuthurai, Sirkali, Nannilam, Thiruvidaimaruthur, Thiruvayar, Valangaiman, Tranqubar, Thiruvarur, Kodavasal, Needamangalam and parts of Thanjavur, Papanasam, Mannargudi, Thiruthuraipoondi and Nagapattinam. The Southern portion of the district lies about 15 metres higher with light soils and comprises of the whole of Pattukottai and Peravurani Taluks and southern portions of Thanjavur and Papanasam and the western part of Mannargudi. The deltaie portion is monotonously flat sloping very gently towards the east and is devoid of Natural eminences, save ridges and hillocks of blown sand which fringle the sea coast. Salt land is generally met with in hillows on the coast and the southern sea board of Thiruthuraipoondi taluk is a salt swamp.

23. The new delta and upland portion of the district are on open flat sloping to the east and equally destitute of hills. A small part of the upland portion lying to the south and south west of Thanjavur rises a little above the surrounding level and forms a small plateau known as Vallam table land, and is broken by small ridges of grit and sand stores. This portion is occupied by sedimontary rocks chiefly laterite and thickly covered with quartz, pebbles and sand stones. The other part of the district consisting of southern portion of Thanjavur and western portion of pattukottai taluks does not form the natural delta of the Cauvery. This tract is about 15 metres higher than the delta except along the Vallam ridge where the height is little more but like delta it is open sloping from northwest to southwest and is similarly destitute of high eminances.

24. *Geology.*—Except for a very small part, the district is largely covered by river alluvium. At the north western part of the district there are some geological formations, which are given below in the increasing order of antiquity :—

Recent and sub-recent	Alluvium Kankar Laterite.
Tertiary (Miocena-Pliocena)	Reddish brown, yellow and greyish gritty sand stone.
Creteceous (Ariyalur)	Buff and brownish yellow Caleareous sand stone.
Archaean	Quartze—felspathic micageiss traversed by quarty veins and pegmatites.
	Quartz magnetite rock.

25. *Mineral Occurrences.*—(1) Kankar occurs at Thirumalaisamudram (10° 44′ : 79° 01′) and to the south east of Buddalur (10° 47′ : 78° 50′) five patches have been located at Thirumalaisamudram having a thickness of 2.4 to 3.0m. Their total reserves are of the order of 5,32,530 tonnes. The kankar is of cement grade but the reserves are small.

(2) To the south-east of Buddalur, Kankar nodules are associated with reddish brown soil is isolated patches over weathered quartze felspathic gneiss in the neighbourhood of Chellappampettai (10° 46′ ; 79° 00′) and Pudur (10° 47′ ; 79° 00′).

(3) Lime shell occurs near the 3rd milestone on the road leading to Thiruppundi (10° 38′ 79° 49′) from Nagapattinam. The shells occur in a stiff caleereous clay at a depth of 2.4 to 4.6 m. The shelly layer is about 10 Cm. in thickness and is associated with Kankar. These are worked on a small scale for lime burning.

(4) Rebbles of quarts occur at and around Vallam (10° 43′; 79° 03′).

(5) The beach sands of Kodiyan palayam (11° 23′; 70° 44′) and those lying north and south of Tranqubar (11° 01′; 79° 51′) upto Karaikal carry a high concentration of ilmenite and also bear garnet. The tranquebar deposits have a probable reserve of 90,400 tonnes of ilmenite and 4,900 tonnes of garnet.

(6) The alluvial soil of the delta and the river sands are the source of inexhaustible materials for construction purposes., like brick-making, concrete and mortar work.

(7) Red earth is reported near Kanniyakudi (11° 11′ 79° 41′)

(8) The natural gas was found to emanete from bereholes and dug well located in the alluvial strata at Meypathur (11° 13′: 79° 49′) and Mangamadau (11° 14′ : 79° 49′) A sample has analysed 75 per cent methane with small quantities of 10_2 and nitrogen. The gas was probably derived from degaying beds of vegetation at a depth of 60.9

(9) Peat was reported to occur at a spot near the promentary about 32 Kms. from Point Calimere.

26. *Soil.*—The soil of the delta is entirely alluvial but varies greatly in quality. Marked differences are often found between belts of land and even sometimes in the same belt itself. The soils commonly met with in the forests of the division can be broadly classified into the following groups :—

(1) Alluvial soil.
(2) Red ferruginuous soil or lateritie soil.
(3) Regur (Black soil).
(4) Arenaceous soil.
(5) Kalar soil.

27. *Alluvial soil.*—These alluvial soils occur mostly in deltaie region along the bank of rivers and canals varying greatly in quality and composition, the quality deteriorating as it reaches the coast. The long narrow belt between the coleroon and the cauvery commencing at the Grand anicut and going right down to Kumbakonam contains the best alluvial soil with a generous mixture of sand. Sand soil is confined to the coast and river beds, with practically without humus. These soils are very deep without any stratification due to result of constant deposition by the rivers. The colour of the soilvaries from yellowish brown to brown and the texture sandy loam to clayey loam. Small lime concretions are found scattered throughout the profle. The alluvial soils are deep fertile and having good drainage Both calcarious and non-calcarious types are met with. The soil is hard when dry and friable and stocky when moist with P.H. range of 8.0 The alluvium may be sandy with very little of clay and practically without humus as in the Maharajapuram reserved land and Pudupattinam where casuarina has been planted and also on the sea coast. The soil in the mangroves has a high percentage of dark coloured clay with plenty of organic matter. In the coastal forests of Muthupet, Talainayar and chartran the soil is of a mixed alluvial type of considerable depth, occasionally with small patches of sand. In consistency it varies from a semi-fluid nud to heavy stiff clay depending upon the period of imundation.

28. *Red ferruginuous soil or lateritic soil.*—The red ferruinuous soils are of the low level, dark red in colour, fine and rich and are strongly weathered. They are formed out of the Cuddalore sand stones. The brick like red colour is caused by the rickness of iron. The P. H. ranges from 5.4 to 6.7. The soils contain very little of silicate/sesqui cxide ratio. These characteristic are chiefly responsible for their poor base exchange capacity, cohesion, skrinkage and expansion. They have extremely high power to fix large quantities of added phosphates in an unavailable form and consequently even if the total quanity of phosphoric acid is more its availability is much less. These soils are very poor in almost all plant nutrients viz., nitrogen, potash Calcium available phosphorus organic matter and soluble, salts.

29. *Regur or black soil,*—The black cotton soils are formed from a variety of rocks and develop either from the decompostition of the parent rock in situ or from the alluvial deposits derived largely from the weathered rock. These are highly argillaceous heavy soils with low degree of horizonation, block in colour neutral to alkaline in reaction, the P.H. ranging from 7.2. to 9.0. The clay content consitutes 40 per cent to 60 per cent of soil. It is often mixed with calcium carbonate, often in the form of Kankar often forms hard compact pans obstructing drainage. These soils are highly adhesive, plastic, stickly when wet and become hard and cloddy on drying. Deep cracking clayer texture occurrence of scattered line concretious and sand streaks within the profile are some of the common features. These soils are very dark, grey brown balck in colour with fine strong subangullar blocky strucsure etc., permeabiliiy of the soil is very low.. They have high water holding capacoty but this is however counter balanced by high hygroscopic and writing co-efficients with consequent low moisture availability. It is more fertile than the red soil even through the organic matter content of this soil is low. If contains a considerable quanitity of lime, magnesia potash, iron alumina but is poor in nitrogen and phosphoric acid. This soil is liable to be easily eroded.

30. Black cotton soil occurs widely near Talainayar vedakadu, Thuraikadu. etc.

31. *Arenaeocus soil.*—The term arenaceous denotes sandy soils. This is frequently met with in Pattukottai and Peravurani Taluks. It is characterised by high percolation with low retentivity of moisture. The P.H. value ranges from 6.5 to 7.6 and as such it is neutral or slightly acidic. The enutricent status of this soil is poor, in respect of major neutrients such as nitrogeon, phosphorus and potash. The base exchange capacity is poor in such soil. The soil is deep without much marked differenciation in the profiles. Sandy soil is commonly met with in Udayamarthandapuram forest.

Section 4—Climate and Rainfall.

32. The Thanjavur division has a healthy Warm climate with a prolonged hot summer, characterised by high tenperature and a low degree humidity. The coast is well adopted as a place of resort for concales cents on accounts of its equable and moderate temprature together with the refersning coolness of the sea breeze Point Calimere is much famed for the and coolness of its climate during the hot months and it is protected from the scorching land winds of the south west-mosoon. This locallity is perhaps the coolest on the east coast of the Bay of Bangal.

33. Broadly the claimate, according to international Zonal classification by Bengroulus and Gaussen falls to the class 3 Xeroethrmic tropical biolclaimate. Legris and virat have, further subdivided thsi type and accordinlgy the climate is called 36th medium tropical transitional bioclimate. This is characterised by monhtly temperature always 1,500 above 27° C. total annual reainfall varying from 500 with a dry period of 5 to 6 months.

34. *Temperature.*—In June when hot winds prevail and the rivers have not yet received their full supply; the heat becomes not a little trying but after this when fresher occur in the river and occasional showers of the south-west monsoon begin, the temperature cools down gradually till October. There after with the getting of the north east monsoon the temperature steadily falls till December when it reaches the minimum. The atmosphere continues to be cool till about the end of January. In February and early parts of March the weather becomes mederately warm during days though still cool at nights with heavy dew falls, but with the later part of March the hot season commences. The increased width of the irrigatied land causes more evaporation which makes the country cooler towards the sea. Humidity is very high in the delta region.

35. The average maximum temperature for the District as a whole about 35.2 °C and the average minmum temperature is 21.8°. C. The maximum temperature reaches earely obver 42.8° C and the minimum touches even 15.6°C. The metrological data for the Thanjavur District are given in Appendix-I.

36. *Winds.*—The South-west winds which sets in during April is strongest in June and continues till September. At the beginning of November the north-east monsoon sets in it begins to blow afresh till January though not with the strength of the south-west wind. Along the west coast storms and cyclones may occur in November also.

37. *Rainfall.*—The mean annual rainfall of the Thanjavur District ranges from 710 mm to 1,295 mm with 46 to 58 rainy days. There is a considerable variation in annual rainfall from place to place and from year to year. It is as low as 710 mm recorded at Thirukattupalli and as high as 1,295 mm recorded at Vedaranyam. The number of rainy days vary from 40 days at Thiruvaiyar to 63 days at Thiruthuraipoondi.

38. The south-west monsoon sets in May or June and continues more or less till September but the rainfall during this monsoon is very much lower than that of north-east monsoon, i.e., more than 60 per cent of the rain fall is received during the north-east monsoon. The north-east monsoon sets in October and continues more or less till December. The average annual rainfall received at the coastal regions is more than in the inland regions.

39. The average rainfall figures recorded in six well distributed stations are furnished in Appendix-I C.

40. Although the Thanjavur district has generally a healthy climate, it is by no means free from diseases, the Chief among these diseases are diarrhoea, dysentry, influenza, malaria, Tuberculosis, leprosy, small-pox and Cholera some of these are obviously caused by insanitary conditions; others thrive on ignorance of personal hygiene, while some others play havoc due to the inadequate co-operation of the public with the helath authorities.

SECTION—5. WATER SUPPLY.

41. There are no important sources of water supply wuthin the R. Fs. Fresh water is normally obtained from lakes, tanks, streams and rivers as many wells yield only brackish water. All the tanks, lakes, streams and wells are rainfed. These tanks and some of the wells built during the Panchyat management are the Chief sources of drinking water to the cattle. Water is available at a depth of about 5 m. and water table goes deeper to 8 to 100, or more during summer.

42. Cauvery, Vennar, Vettar, Coleroon, Kudamuruttiar, Arasalar, Thirumairajan and numerous other small streams provide good water supply to the areas served by them.

43. The water supply to the cattle and Wild Life in Kodiakkadu Reserve Forest is not adequate. There are three check dams and two wells in the Reserve Forest. Some more check dams and wells well scattered may benefit the wild life so that the congregation of them in large numbers at one water source and contaminating the water can be avoided.

The bunds of the check dams and the parapets of the walls may be maintanied periodically.

44. The water supply to the forest rest houses and subordinates quarters at Point Calimere is inadequate since the departmental well yields only brackish water. Drinking water has to be carried in tankers over great distance from Vedaranyam. The departmental well at Point Calimere requires desilting and other improvements like ba ling out water atleast once a year.

45. A list of wells and tanks in the division is given below :—

Serial number and location.	*Year of construction.*	*Cost of construction.*	*Maintenance cost.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)
		RS. P.		
1 *Wells.*—Near the forester's quarteres at Kodiakkadu.	1941-42	214 00	Nil.	..
2 *Tanks.*—Karuthanpattan Moraskulam.	Both situated in Neppugai resrved.	..	Nil.	Handed over to TAFCORN.
3 Point Calimere Game Sanctuary two wells.	1981-82	5,000. 00	Nil.	Cost of construction per well Rs. 25.00.
4 Check Dam three Point, Calimere Game sanctuary.	1981-82	7,800 00	Nil.	Cost of construcion. Per check dam Rs. 2,600.

SECTION—6. DISTRIBUTION OF AREA.

46. (*a*) The headquarters of Tanjore Forest Division has been changed to Nagapattinam as per G.O. Ms. No, 1347, Forests and Fisheries Department, dated 7th October 1982 (Chief Conservator of Forest's Endt. No. K3/31420/82-6) which comprises of the following taluks of East Tanjore District.—

1. Myladuthurai.
2. Sirkali.
3. Tranquebar.
4. Nagapattinam.
5. Thiruvarur.
6. Nannilam.
7. Kodavasal.
8. Thiruthuraipoondi.
9. Vedaranyam.
10. Mannargudi.
11. Needamangalam.

(*b*) The West Thanjavur District comprising of the following taluks all forestry operations such as planting, maintaining and harversting will be controlled by the Divisional Forest Officer, Social Forestry Division with headquarters at Tanjore.

1. Thanjavur.
2. Thiruvaiyaru.
3. Papanasam.
4. Kumbakonam.
5. Thiruvidaimaruthur.
6. Orathanadu.
7. Pattukottai.
8. Peravoorani.
9. Valangaiman.

47. The Thanjavur Forest Division consists of seven Ranges. The Social Forestry Division consists of five Ranges for the implementation of Farm Forestry schemes in the Government lands outside the forest areas.

The distribution of the areas are as follows :--

1. Reserve Forests	16,088 37 ha.
2. Reserve Lands	886 51 ,,
Forest under other classes (pending settlement) ..	847 88 ,,
Total ..	17,822 76

48. A complete list of Reserve Forest with the dates of their reservation, particulars of notification and date of taking over by the Departmen' is furnished below:—

48. Statement showing the Reserved Forests in the Thanjavur Division and Notification.

Serial number and Revenue District.	*Name of the reserved forest.*	*Area in ha.*	*Range.*	*Revenue. taluk.*	*Name of block and number.*	*Notification and date.*	*Page in forest St. George Gazette.*	*Whether finally demarcated or not.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1 Thanjavur ..	Kodiakadu ..	1,843-81	Vedaranyam	Vedaranyam	Kodaikadu I	No. 188, dated 4th May 1982.	Published at page No. 598 of Part I of the Fort St. George Gazette, dated 10th May 1892.	Yes.	....
2 Thanjavur ..	Kodiakadu extension								
	No. I ..	233.72	Do.	Do.	..	..	No. 475, dated 1st June 1938.	Yes	....
	No. II ..	10.48	Do.	Do.	..	..			
	No. III ..	6.96	Do.	Do.	..	..	Do.	Yes.	....
3 Thanjavur ..	Talanayar ..	1,236.29	Do.	Do.	Talanayar	No. 451, dated 28th October 1931.	Fort St. George Gazette, dated 28th October 1931, Part -I page-1424.	Yes.	Under G.O. Ms. No. 2276, Revenue. dated 28th October 1931 with reference to notification 235, dated 4th August 1888 Published at page 614 of part of the Fort St.. George Gazette, dated 14th August 1888.
4 Thanjavur ..	Muthupet ..	6,803.01	Pattukkottai	Thiruthuraipoondi.	Muthupet Block	No. 98, dated 3rd February 1937.	Published page at 298, in Part I of the St. George Gazette, dated 9th February 1937.	Yes.	....
5 Thanjavur	Thuraikadu ..	2,636.54	Do.	Do.	Thuraikadu Block village No. 135, Thuraikadu.	No. II-I, 2940 of 1965, dated 16th June 1965.	Published at page 1315 of Part II—Section I of St. George Gazette dated 7th July 1965.	No.	G.O. Ms. No. 2223, Food and Agriculture, dated 16th June 1965.
6 Thanjavur ..	Udayamarthandapuram.	36.00	Pattukottai	Do.	Udayamarthandapuram.	No. 4108/72, dated 2nd November 1972.	Published at page 792 of of Part II—Section I of St. George Gazette, dated 30th August 1972.	Yes.	G.O. Ms. No. 2004, Agriculture, dated 28th July 1972.
7 Thanjavur	Thamarankottai ..	529.00	Pattukottai	Pattukottai	Thamarankottai	No. 4813/72, dated 1st January 1973.	Published at page 894 of of Part II—Section I of St. George Gazette dated 25th October 1972.	Yes.	G.O. Ms. No. 2433, Agriculture, dated 18th September 1972.
8 Thanjavur	Vadakaru ..	320.28	Pattukottai	Pattukottai	Vadakadu ..	No. 4807/72, dated 1st January 1973.	Published at page 892 of Part-II—Section I of St. George Gazette, d2ted 25th October 1972 ,	Yes.	G.O. Ms. No. 2354, Agriculture, dated 8th September 1972.

48. STATEMENT SHOWING THE RESERVED FORESTS IN THE THANJAVUR DIVISION AND NOTIFICATION—*cont.*

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
9 Thanjavur ..	.. Maravakkadu ..	1,356.07	Pattukottai	Pattukottai	Maravakkadu	No. 9607/78D, dated......	Published at page 437 of Part-II—Section 2 of T.N.G.G. dated 8th August 1979.	Yes.	G.O. Ms.No. 4812/79, Forest and Fisheries.
10 Thanjavur .	.. Avanam ..	36.29	Do.	Peravurani	Avaram	4109/72, dated 2nd November 1979.	Published at page No. 792/793/30th August 1972.	Yes.	G.O. Ms. No. 2005, Agriculture, dated 28th July 1972.
11 Thanjavur .	.. Pudupattinam Bit II	44.63	Sirkali	Sirkali	Pudupattinam	4433/72	Published at pages 838, 839 of Part II—Section 1 of Fort. St. George Gazette, dated 20th September 1972.	Yes.	G.O. Ms. No. 2229, Agriculture, dated 23rd August 1972.
12 Thanjavur ..	.. Sodiakudi ..	66.95	Do.	Do.	Sodiakudy	1523/78	Published at page No. 103, Part-II—Section 2 T.N.GG., dated 13th February 1980.	Yes.	G.O. Ms. No. 732/80, Forest and Fisheries.
13 Thanjavur ..	.. Mudalaimadu	51.07	Do.	Do.	Mudalaimadu	No. 4815/82, dated 1st January 1973.	Published at page 895, Part II—Section I, 25th October 1982.	Yes.	G.O. Ms. No. 2470/ Agriculture, dated 21st September 1972.
14 Thanjavur ..	.. Alakudi ..	183.00	Do.	Do.	Alakudi	No. 45/73, dated 2nd December 1973.	Published at page 589, Part II—Section I, dated 21st September 1973.	Yes.	G.O. Ms. No. 35, Forests and Fisheries dated 20th September 1973.
15(*a*) Thanjavur	.. Nagavalli ..	38.81	Thanjavur	Thanjavur	Nagavalli	No. 4811/72, dated 1st January 1973.	Published at page 893/ Part II—Section I, dated 25th October 1972.	Yes.	G.O. Ms. No. 2410, Agriculture, dated 15th September 1972.
15(*b*) Thanjavur	.. Kattur ..	109.33	Sirkali	Sirkali	Kattur	..	Published at page No. 205/Part II—Section 1, dated 2nd April 1980.	Yes.	G.O. Ms. No. 1366/80.
16 Thanjavur .	.. Kodiampalayam ..	73.69	Do.	Do.	Kodiampalayam	Dated 2nd November 1972.	Published at page 784, Part-II—Section 1, 4093, dated 23rd August 1972.	Yes.	G.O. Ms. No. 1989, dated 27th July 1972
17 Thanjavur ..	.. Gopalasamudram	170.66	Do.	Do.	Gopalasamudram	No. II(2) FRF. 5169/R1, dated 9th December 1981.	Published at page 805, in Part II of T.N.G.G.	Yes.	....
18 Thanjavur ..	.. Pudupattinam Bit I	282.89	Do.	Do.	Pudupattinam Bit I	No. II(2) FRF I, 934/82, dated 16th March 1982.	Published at page 152–153 of Part-II—Section II, T.N.G.G.	Yes.	....
19 Thanjavur	.. Pudupattinam Bit IV	8.22	Do.	Do.	..	..	..	..	..

49. Statement Showing the Establishment Beats and Section in Thanjavur Division.

Serial number, name and headquarters.	*Beat Headquarters.*	*Staff.*	*Section name.*	*Section for which staff sanctioned.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)	(6)
		(*a*) Thanjavur Range.			
1 Nagavalli ..	Nagavalli	1. Forest guard	Kallanai	1. Forester	..
2 Thiruvaiyaru ..	Thiruvaiyaru	Do.	Thiruvaiyaru	Do.	..
3 Kandiyur ..	Kandiyur	Do.	..	..	..
4 Nagathy ..	Nagathy	Do.	Do.	Pilliaraharam	..
5 Vallam ..	Vallam	Do.	..	..	..
6 6Sengipatti	Sengipatti	Do.	..	..	..
7 Saliamangalam	Saliamangalam	Do.	Saliamangalam	1. Forester	..
		(*b*) Pattukottai Range.			
1 Thamarankottai	Thamarankottai	1. Forest guard 1. Reserve watcher.	Muthupet	1. Forester	
2 Chatram ..	Thuraikadu	1. Forest guard 1. Reserve watcher.	Do.	Do.	..
3 Muthupet ..	Muthupet	1. Forest guard 1. Reserve watcher. 1. Do.	Do.	1. Forester for Udayamarthandapuram.	..
4 Avanam ..	Avanam	1. Forest guard	Pattukottai	Forester	..
5 Thondarampet	Thondarampet	Do.	..	Under the control of the Range Officer.	
		(*c*) Mannargudi Range.			
1 Mannargudi ..	Mannargudi	1. Forest guard	Mannargudi	1. Forester	..
2 Thirukalar	Thirukalar	Do.	Do.	1. Forester	..
3 Edamalaiyur	Edamalaiyur	Do.	..	..	Under the direct control of the Range Officer.
		(*d*) Sirkali.			
1 Pudupattinam	Pudupattinam	1. Forest guard 1. Reserve watcher.	Pudupattinam	1. Forester	Temporary on SCP Scheme
2 Coleroon ..	Coleroon	1. Forest guard	Coleroon	1. Forester	..

49. Statement Showing the Establishment Beats and Section in Thanjavur Division—*cont.*

(1)	(2)	(3)	(4)	(5)	(6)
		(*d*) *Sirkali*—cont.			
3 Sodiakudi ..	Sodiakudi	1. Reserve watcher.	..	..	..
4 ..	..	..	Sirkali	1. Forester	..
5 ..	..	..	Sirkali	Do	Special Duty.
6 Nagapattinam	Nagapattinam	1. Forest guard	..	..	Special duty under the direct control of the Range Officer.
7 Thirumullaivasal	Thirumullai-vasal.	1. Forest guard	..	..	Do.
		(*e*) Kumbakonam Range.			
1 Valangaiman (N)	Valangaiman (N).	1. Forest guard	Kumbakonam	1. Forester	..
2 Valangaiman (S)	Do.	Do.	Solapuram	Do.	..
3 Maharajapuram	Maharaja-puram.	Do.	Thiruvarur	Do.	..
4 Swamimalai ..	Swamimalai	Do.	Kodavasal	Do.	..
5 Nachiarkoil ..	Nachiarkoil Alaharaya-puram.	Do. 1. Watcher.	Nannilam	Do.	..
		(*f*) Chidambaram Range.			
Kodiampalayam	Kodiam-palayam.	1. Reserve watcher. (vacant) temporary.	Chidambaram	1. Forester	..
..	..	..	Chidambaram	1. Forester	Temporary.
		(*g*) Vedaranyam Range			
Kodiakadu ..	Kodiakadu	3. Forest gaurd	Kodiakadu	Forester 1	..
	Agasthiam-palli.	2. Forest guard	Do.	Checkpost duty.	..
	Kodiakadu	2. Reserve watcher.	Do.	..	..
Talanaiyar ..	Talanaiyar	1. Forest guard 2. Reserve watcher.	Talanaiyar	Forester I	..
Muthupet ..	Muthupet	1. Reserve watcher.	Muthupet	Forester I	Incharge of implementation of Wild Life Act in Thanjavur District.

50. STATEMENT SHOWING THE ESTABLISHMENT SECTION IN EACH RANGE OF THE THANJAVUR SOCIAL FORESTRY DIVISION.

Serial number.	*Name of the section.*	*Section for which staff sanctioned.*	*Remarks.*
(1)	(2)	(3)	(4)
	Thanjavur Range Headquarters, Thanjavur.		
1	Thanjavur	Forester-1	....
2	Thirukattupalli	Do. ..	....
3	Budalur	Do. ..	....
4	Sengipatti	Do. ..	....
5	Saliyamangalam	Do. ..	....
6	Thanjavur	Do. ..	Forester sanctioned for godown.
	Kumbakonam Range Headquarters, Kumbakonam.		
1	Kumbakonam	Forester-1	....
2	Thiruvidaimarudur	Do. ..	....
3	Anaikarai	Do. ..	....
4	Valangaiman	Do. ..	....
5	Papanasam	Do. ..	....
	Orathanadu Range Headquarters, Orathanadu.		
1	Orathanadu	Forester-1	....
2	Papanasam	Do. ..	....
3	Thiruvonam	Do. ..	....
4	Venkaarai	Do. ..	....
5	Neiveli	Do. ..	....
	Pattukkottai Range Headquarters, Pattukkottai.		
1	Pattukkottai	Forester-1	....
2	Madukkur	Do. ..	....
3	Thiruchitrambalam	Do. ..	....
4	Annapuram	Do. ..	....
5	Pallathur	Do. ..	...
	Peravurani Range Headquarters, Peravurani.		
1	Peravurani	Forester-1	....
2	Perumangalur	Do. ..	....
3	Pookollai	Do. ..	....
4	Sethuvachatram	Do. ..	....
5	Avanam	Do. ..	....

Section 7—State of Boundaries.

51. The distinction between reserved forests and the rest of the land is maintained by cleared lines 3.5 to 5.5 metres wide, except where streams, rivers, sea are utilised as boundaries. Stone pillars of 1.5 to 2.0 metres high are placed at angles and intermediate points along the cleared lines. The stone pillars bear the letters Reserved Forests with an arrow mark above. Owing to the great length of boundary line and the general indifference of staff, boundaries and not kept regularly cleared. In some places where reserve land bearing some forest growth meet the reserve

or patta land and along lines where the reserve and forests or the ranges or district meet, the demarcation line has not been cleared for years leading to confusion. Discrepancies exist in many reserve lands between the settlement maps and the boundaries as they exist on the ground arising mainly due to the alteration made during the revenue survey and partly due to encroachment also. Similarly in Padugais large variations have occured owing to constant washing away of the river banks due to floods.

It is necessary to take up boundary verification systematically on a phased programme to rectify the difference and to number the cairns according to settlement maps. Boundary pillars have not been numbered serially except in Thalaiyar Reserved Forests. In the mangrove forests some of them are missing or have fallen due to erosion. At Pudupattinam the eastern boundary has not been demarcated and maintained properly though the Bay of Bengal forms the boundary. Demarcation on the ground by erecting stone cairn pillars has been done in Muthupet, Thalainayar and Kodiakadu Reserved Forests and all the reserve lands. In Thuraikadu Reserved Forest demarcation on the ground has not been done.

Section 8—Legal Position.

52. The reserved forests of the Division are the absolute property of the State subject to the right and concessions admitted at the time of settlement and have been declared under section 16 of the Tamil Nadu Forest Act V of 1882. The various rights and concessions admitted, are contained in the Fort. St. George Gazettee notifications relating to each reserve. Reference to number, date and page of the notifications in the Gazettee has already been given in the list of Reserve Forests in paragraph Steps should be taken for the reservation of 6 blocks of forest area which have already been notified under section 4 of Tamil Nadu Forest Act V of 1882.

53. The details of the 6 blocks are furnished below and also the following blocks are yet to be notified under section 4 of the Tamil Nadu Forest Act V of 1882.

53. NOTIFIED UNDER SECTION 4 YET TO BE NOTIFIED UNDER SECTION 16.

Name of range.	*Revenue district.*	*Revenue taluk.*	*Name of the block.*	*Area in ha.*	*G.O. in which notified under section 4 of Tamil Nadu Forest Act.*	*Date of publication of section 6 notification in the district gazette.*
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Sirkali	Thanjavur	Sirkali	Pudupattinam Bit III ..	144.05	Not available	Not available.
Kumbakonam ..	Do. ..	Kumbakonam	Maharajapuram	273.97	G.O. Ms. No. 364, Forests and Fisheries, dated 28th March 1983.	26th January 1983.
Do. ..	Do. ..	Do. ..	Athiyur	147.05	G. O. Ms. No. 1632, Forests and Fisheries, dated 16th December 1982.	Do.
Do. ..	Do. ..	Do. ..	Mavithriappu	109.08	G.O. Ms. No. 985, Forests and Fisheries, dated 10th May 1983.	To be published 24th August 1983.
Pattukkottai	Do. ..	Pattukkottai	Seruvaviduthi	17.36	G.O. Ms. No. 448, Forests and Fisheries, dated 15th April 1983.	....
Vedaranyam	Do. ..	Vedaranyam	Kodiakadu Extension IV and V.	194.10	G.O. Ms. No. 806, Forests and Fisheries, dated 8th July 1983.	7th September 1983.
			Total ..	886.51		

54. AREA YET TO BE NOTIFIED UNDER SECTION 4 OF TAMIL NADU FOREST ACT V OF 1882.

Serial number and range. (1)	*Revenue district.* (2)	*Revenue taluk.* (3)	*Name of the block.* (4)	*Area in ha.* (5)	*Remarks.*
1 Sirkali	Thanjavur ..	Sirkali ..	Pudupattinam.	31.46	
2 Do. ..	Do. ..	Do. ..	Koozhaiyar ..	22.55	
3 Do. ..	Do. ..	Do. ..	Thochuvai ..	36.92	
4 Pattukkottai ..	Do. ..	Pattukkottai ..	Vadakadu ..	51.77	
5 Sirkali	Do. ..	Sirkali ..	Pudupattinam.	44.63	
6 Pattukkottai ..	Do. ..	Pattukkottai ..	T. Maravakadu.	133.97	
7 Sirkali	Do. ..	Nagapattinam.	Nagur Bit I ..	44.53	
8 Do. ..	Do. ..	Do. ..	Nagur Bit II ..	33.34	
9 Do. ..	Do. ..	Do. ..	Velanganni ..	25.62	
10 Do. ..	Do. ..	Do. ..	Therku Poyyar.	28.55	
11 Do. ..	Do. ..	Do. ..	Vadakku poyyar.	13.57	
12 Vedaranyam ..	Do. ..	Vedaranyam ..	Kodiakadu ..	327.06	
13 Do. ..	Do. ..	Do. ..	Vilunduvadi ..	32.55	
14 Thanjavur ..	Do. ..	Thanjavur ..	1957 Nagathy Teak Bit II.	1.07	
15 Do. ..	Do. ..	Do. ..	Bit III ..	0.56	
16 Do. ..	Do. ..	Do. ..	1958 Achanur Teak.	0.91	
17 Do. ..	Do. ..	Do. ..	1959 Perumbuliyur Teak.	0.34	
18 Do. ..	Do. ..	Do. ..	Do. ..	0.42	
19 Do. ..	Do. ..	Papanasam ..	1959 Salamangalam Teak I.	0.64	
20 Do. ..	Do. ..	Do. ..	Bit II	1.98	
21 Do. ..	Do. ..	Do. ..	1959 Salimangalam.	1.07	
22 Do. ..	Do. ..	Do. ..	1959 IV ..	0.74	
23 Kumbakonam.	Do. ..	Do. ..	Kumbakonam.	0.97	
24 Do. ..	Do. ..	Kumbakonam.	Malapalayakudi Teak.	0.20	
25 Do. ..	Do. ..	Papanasam ..	1960 Kondiyar Teak.	0.20	
26 Do. ..	Do. ..	Do. ..	Do. ..	1.84	
27 Do. ..	Do. ..	Do. ..	Bit I, II ..	0.17	
28 Do. ..	Do. ..	Do. ..	Bit V	1.78	
29 Thanjavur ..	Do. ..	Kumbakonam.	Kumbiarnathan.	8.52	
30 Mannargudi ..	Do. ..	Needamangalam	Needamangalam	0.26	

55. All other classes of forests (*i.e.* Other than Reserved forests and Reserved lands) are lands at the disposal of Government regulated by the application of Section 26 of the Tamil Na du Forest Act of 1882.

56. Compact teak plantation are retained by the Forest Department while the avenue an d canal teak plantations have been handed over to the Public works department when they are mor e than 3 years old.

Section 9.—Rights and Concessions.

57. The various rights and concessions admitted at the time of forest settlement are recorded in the section 16 notification relating to each reserve and published in the *Fort St. George Gazette*, These notifications are available in the register of Reserved Forests which is maintained in the District Forest Officers. Rights admitted at the time of Forest Settlement for right of way, etc., are given below (*vide* appendix).

Special rights admitted after reservation in Muthupet reserved Forests.

58. Free Fishing in the lagoon of Muthupet reserve Forest was not recognised at the time of reservation. But subsequently on the representation by the fishermen of Muthupet that they were enjoying free fishing in the lagoon from time immemorial, the previlage was conceded in the lagoon in Muthupet Reserve Forest under section-18 of the Tamil Nadu Forest Act V of 1882 in Chief Conservator's Proceedings Miscellaneous No. 136,dated 28th April 1943. No fresh concessions admitted during the period of the current working Plan.

CHAPTER II

THE FORESTS

Section-I. *Composition and Condition of the Crop.*

59. Any type of vegetation in a locality depends much on the climate, soil and the past management. It is rare that the forests have developed to its natural equilibrium under the influence of climate and soil without the interference by external agencies. Agriculture being major pattern of land utilisation in Thanjavur only a small proportion of the land area is under forests. Indiscriminate clearing for cultivation, excessive grazing by cattle, and illicit felling for fuel and fodder in this tract resulted in the degration and depletion of the forests. The hot climatic condition with low rain fall has limited the vegetation to a dry type with small trees and throny shrubs and they are valuable only as fire-wood.

60. There is considerable variation in floristic composition of Thanjavur division from place to place inspite relatively uniform climatic condition. The variation is mainly due to adaphic and topographical conditions.

61. II. The Deccan Region described by Gamble in his flora of the Presidency of Madras and also forms parts of the region referred as "III. The Semi desert Region' in the same flora. For the description of the varions types of Forest met with in this division, the revised classification of the forest types of India by Champion and seth is adopted."

62. The following are the Chief types that are commonly met with :—

(2) 4A3/L1 Litteral Forest.

(3) 4B/Tidal swamp forest.

(4) 6A/C southern Tropical thron forests.

(5) 7/cA Tropical dry Evergreen forests.

63. Under each Forest type the floristics are described under different storeys such as :—

(1) Top canophy trees.

(2) Second storeys trees.

(2) (*a*) Bamboo.

(3) Shrubs.

(4) (*a*) Herbs.

(4) (*b*) Grasses.

Epi 1/2 Epiphtes Par 1/2 parasities.

64. The following abbreviations indicate in quantum and frequence of occurrence of a particular species :—

(*a*) Very abundant. — va

(*b*) abundant. — a

(*c*) occasional. — e

(*d*) locally common. — lc

(*e*) frequent. — f

(*f*) Common. — c

(*g*) rare. — r

(*h*) Locally abundant. — la

65. 4A/*L*1. *Litteral Forests—Description.*—The most characteristic species in the ever green out very light foliages Casuarina which often forms an almost pure firnage on Sand beaches and dunes along the sea face in this Litteral forests. These Litteral Forests are confined around the coast wherever fair width of sandy beach occurs including sandy bars on the sea face of the river dealtas. The habitat near Pudupattinam is an exposed one with pronounced characteristics. The soil is sea sand often blown and occumulating in low dunes with adequate lime from shell fragments

but poor in nitrogen and mineral nutrients. It is very porous coarse and dry at the surface but the water table is usally only a few metres down. The water is often brackish. Strong wines often salt laden act as dessicating agents with strong isolation and radition by xerophytic flora. The temperature is moderated by the proximity of the sea and by the sea breeze, Rain fall varies with locality from 760 mm. to 2,400 mm.

66. Scatters smaller evergreen trees occur which form the dominent canophy with absence of Casuarina. There are numerous shrubs and the under growth comprise light maritim grasses, Spinifi etc.,) with surface creepers binding the sand.

LITTERAL FORESTS

67. The floristics of this type are :—

I/II. Top Canophy/Second Storey :—

Calophyllus inophyllum ..	(c)
Syzygium cumini	(vi)
Cassia fistula	(r)
Sarringtohia acutangula ..	(c)
Paremna latifolia	(r)
Pongamia pinnata ..	(r)
Thespesia populnea.	(r)
Trewia mudiflora	(r)

III. Shrubs :—

Clecredendren	(c)
Cassia auriculata	(f)
Pandance tectorius	(f)
Vitex nigandu	(r)
Jatropha gossypifella	(r)
Opuntia elator	(c)
Catharanthus rescus	(r)

IV. (a) Herbs :—

Iporieea pescaprae	(f)
Sesurium portulacastrum ..	(c)
Evolulus alsencides ..	(c)
Melluge disticha ..	(d)
Melluge nudiceulis ..	(c)
Melluge cervianna	(c)
Lippia modiflora	(c)
Blumea amplectens	(c)
Merrenia tridentata	(c)
Enicostemma verticillatum ..	(c)
Eybanthusennea spermns ..	(f)

IV. (b) Grasses :—

Cyparus arenarius	(la)
Erarestris tremuls ..	(r)
Spinifix litterena	(r)

V. Climbers :—

Abrus precaterius	(c)
Cissus quardrangularis ..	(f)
Cissampelos parierd	(r)

Natural regeneration is absent in this type of Forests since the soil is exposed with pronounced erophytic condition where salt laden wind often below. Further, intensive grazing by cattle from the numerous nearby villages create a condition inimical to the germination of seed and establishment of natural regeneration.

Artificial Regeneration.

68. Plantations of Casuarina have been raised both by agriculturists as well as by the Forest Department all along the sandy areas along the sea shore.

4*E. Tidals wamp forests*.

69. Tidal forests or Mangroves are a complex of evergreen plant communities found as a belt of varying width along the tropical share of sheltered creeks lagoons, deltas and islands below the high tide mark. These edaphic communities are the result of the constantly changing conditions brought about by river deposits, formation of sand bars, lagoons, etc., Mangrove species at times may extend beyond the level of the highest tides. The rainfall in these areas is between 1,200 mm. to 1,400 m.m. per annum. The soil is an alluvial clay of considerable depth, occasionally with small patches of sand. In consistency it varies from a semi fluid mud to heavy stiff clay depending upon the period of inundation. The vegetation thrives under a water logged condition, where soil aeration is very defective. The presence of Sodium chloride as well as free water in the soil produces varying degrees of salinity which is a very important factor peculiar to Mangroves.

70. In the following four zones, the mangroves are well distributed :—

(1) The zone which is between the daily high tide and low tide marks.

(2) The zone which gets inundated only during the equinoctial tides.

(3) The Zone which is inundated only during the monsoon season.

(4) The Zone which never gets inundated at any time.

71. The first zone which borders the forest is occupied by Rhizophora candelaris, Acanthus ilicifolius. Though all the species form gregarious patches here and there, they form associations with one or more of the species of this zone. Excocaria agallocha may be found occasionally in this zone.

72. The second zone is occupied by an association of several species like Avicennia officinalis, Avicennia alba, Exco caria agallocha, Halophytic herbs occurs as an undergrowth in areas where the mangroves are sparce.

73. The third zone is usually dominated by the halophytic herbs almost exclusively and also a few stunted plants of Avicennia here and there. There are blanks without any plant in places where salintiy is high.

74. Low scrub jungle occuping the high fourth zone consisting of Dichrostaclys cinerea, Accacia sundra, Cassia auriculata, Parkiasonia, aeuleata, Clegodendren inerme, Trewia asiatica, Azardachta indica, Pongamia pinnata, etc., Excoecaria may occur at the lower fringes. In places where there is accretion of sand, Pandanus tectorius and spinifil aguarrosul are found.

75. The following forest types occur in the tidal swamps :—

(1) 4B/T.S1, Mangrove scrub.

(2) 4B/T. S2 Mangrove forest.

76. *4B/Ts* 1/*Mangrove scrub.*—Mangrove scrubs are mainly confines all along the fringes of lagoons and islands of Thalainayar, Muthupet, Vadakkadu, etc. This is more or less a low dense forest. The species are very few in number and marked by gregarious all evergreen with entire leasthery leaves. This mangrove scrub is found a little further away from mangrove forests towards the interior parts of islands. It is subject to inundation with salt water. Large areas are found containing no tree species but occupied by the halophytic plants like the species Suaeda, Sessuvium and Salicornia. Climbers are absent. Young regeneration of Avicennia marina is usually found in these areas.

The floristic of this type are I/II Top Canophy/Second story—

Aviceunia officinalis	(c)
Avicennia marina	(c)
Exceocaria agallocha	(f)
Lummitzera racemosa	(c)

III. Shrubs—

Acanthus ilicifolius	(rf)
Cariops roxburghiana	(r)
Clerodendron inernue	(f)

IV. (a) Herbs—

Swaeda martina	(c)
Swadia monsich	(f)
Sesuvium portuacastrum	(r)
Salicornia luacteata	(c)
Arthrochemum fruticosum	(r)
Aschaneminal indica	(r)

(b) Grass—

Fimbristylist polytrichoides	(la)

77. *4B/Ts 2 Mangrove Forests.* This type of forest is found all along the fringes of lagoons and island of Muthupet, Chatram, Thalainayar, Tamarankottai, etc., This is typically aclosed evergreen forest of moderate height upto 10m. Composed of trees specially adpted to survive on tidal mud which is permanently wet with salt water and submerged at every tide.

78. *Floristics of this type are :—*

I/II Top canophy / Second storey.

Rhyzophora nucronata	(r)
Rhizophora Candalaria	(r)
Avicennia officinalis	(rf)
Avicennia alba	(f)
Excoecaria agallocha	(f)
Lumnitzera racemosa	(c)
Ceriops roxburzhiana	(r)
Bruguiera cyclindrica	(r)
Sonneratia apelata	(r)

III. Shrubs—

(1) Clerodendron cinerme	(f)
(2) Aegiceras corniculatum	(c)
(3) Acanthus ilicifolius	(la)

V. *Climbers—*

(1) Dalbergia spinosa

(2) Derris trifoliata.

79. The mangroves are remarkably adopted to the peculiar edaphic factors of the locality. Stilt roots characteristic of the species of Rhizophora are also seen in a Acanthus ilicifolius. Pnuematophores of Avicennia grow above the soil and water level. The leaves are thick and leathery with thick cuticle, water storage tissues deeply seated chlorenchyma and salt secreting glands. The number of stomata per unit area is usually high in most of the Mangroves. The fruits are dispersed by water as they are able to flost for a number of days without deterioration of the majority of the species.

80. There had been diverse opinions regarding the ecological status of mangroves. Stamp and Buritt Davy considered mangroves as climatic climax where as Tanselay and chip preferred to assign the status of edaphic climax. Champion placed the tidal forests under primary several types of the moist tropical seral formations.

Scrub jungles—

81. Inside the Mangroves area at Tamarankottai, Thuraikadu is on the elevated land above inundation zone. Here occurs a kind of scrub jungle which is a combination of both 6A/Ds. Southern thorn scrub and 7/D S1 Tropical dry ever green scrub.

82. There is more or less open low forest with dense bushes and climbers and occassional trees.

Scrub Jungle.

83. *Floristics—*

I/II/Top Canopry/Second Story :—

Dichrostachys cinera	(c)
Crataeva religiosa	(r)
Morinda tinctoria	(r)
Pongamia pinnata	(c)
Parkinosonia aculeata	(r)
Manilkara littoralis	(r)
Acacia arabica	(la)
Atlantia monophylla	(r)

III. Shrubs—

Azima tetracantha	(c)
Cassia auriculats	(la)
Clero dendron incrme	(vf)
Gmelina asiatica	(r)
Jatropha glandalifera	(c)
Opuntia delleni	(la)
Memecyclon umbellatum	(r)
Gymnosporia emerginata	(r)
Securinega virosa	(r)

IV. (a) *Herbs—*

Genis-sporium tenuiflorum	(r)
Borreria articularis	(c)
Cressa cretica	(c)

V. Climbers—

Cissus quadrangularis	(f)
Asparagus racemosus	(c)
Tinospora cordifolia	(r)
Cocculus hirsutus	(r)

84. *Natural Regeneration.*—Natural regeneration from seed is satisfactory for many of the mangrove species (such as Rhizophora, Excoecaria, etc.) in areas subjected to inundation or free from the growth of Acanthus ilicifolius and species of Suaeda under favourable conditions where there is no biotic factor operating. All species regenerate naturally from seed or viviparous seedlings which are dispressed by water.

85. Unrestricted grazing is the chief factor militating against the establishment of the mangroves especially avicennia being widely eaten by cattle is repeatedly browsed with the result it seldom grows above 2m height. Artificial regeneration with suitable species wherever possible is very essential to improve the stocking along the fringes of lagoons, etc., and in the open patches.

86. 6A/C1. *Southern Tropical Thorn Forests.*—The thorn forests are mainly confirmed to the plains of Avaram receiving an annual rain fall of 900 m.m. to 1,200 m.m. It is an open low forest with thorny usually hard wooded species, Accacia species being particularly characteristic. The trees usually have short boles and low branching crowns which rarely meet. The usual height is 6 m. to 9 m. There is an ill, defined lower storey of smaller trees and large shrubs mostly spiny and

often with other xerophytic character. There is usually thin grass growth which may appear fairly complete during the short moist season. Climbers are few frequently showing xerophytic adoption. Thorny Zizyphus and Euphorbias are generally present and form conspicuous constituent of the vegetation. Opuntia though not indigenous has become naturalised over wide tracts at the ground level. Capparis is also a typical genus. The soil is generally thin shallow and stony.

87. The floristics of this type are :- -

I/II Top Storey/Second Storey.—

Albizzia lebbeck	(c)
Albizzia amara	(f)
Albizzia ordoratissima	(c)
Acacia Ieucophloea	(f)
Zizyphus mauritiana	(c)
Acaca sundra	(f)
Acacia senegal	(c)
Azadirachta indica	(f)
Lannea coromandelica	(f)
Chlorozylon Swietenia	(f)
Commiphora caudata	(c)
Cassia fistula	(f)
Atlantia moniphylla	(f)
Zizyphys zylophyrus	(r)
Cleisthanthus collinus	(c)
Canthium discocoum	(c)
Dichrostachys cinerea	(f)
Maytenus emarginata	(1)
Acacia latrorum	(r)
Cordia monoicam	(c)
Wrightia tinctoria	(c)
Commiphora berryi	(r)
Cyrocarpus jacquini	(r)
Strychnos-nuz-vomica	(vf)
Bauhinia racemosa	(r)
Dalbergia paniculata	(c)
Erythroxylon tomentosum	(r)
Pouteria tomentosa	(r)
Commiphora berryi	(r)
Vitex altissima	(r)

III. Shrubs—

Carris carandas	(vf)
Carrisa opaca	(f)
Rhus mysorensis	(r)
Dodonaea viscosa	(vf)
Randia dumctorum	(vf)
Securinega laucophyrus	(c)
Oputia elator	(c)
Grewia hirsuta	(o)
Caudata fruticosa	(o)
Cappris sepiaria	(f)
Cassia auriculata	(vf)
Kirganelia reticulate	(r)
Solanum pubescens	(c)
Calotropis proceera	(o)

III. Shrubs—cont.

Jasminum rigidum	(e)
Vebra corumbosa	(c)
Memecyclon umbellatum	(c)
Baleria prionitis	(r)
Pavetta indica	(vf)
Melicteres isora	(c)
Holarrhena antidysentrica	(r)
Flacomtra indica	(f)
Carrisa offeca	(e)
Cymnosporia emarginatus	(c)
Fluggea microcarpa	(r)
Glycosmis cochinchinensis	(r)
Clerodendron serratum	(e)
Phoenix acaulis	(vf)
Ehretia laevis	(r)

IV (*a*) *Herbs*—

Trichodesna indicum	(r)
Scutia indica	(r)
Leucas aspera	(c)
Tephrosia purpurea	(f)
Ocimum americanum	(c)
Indigofera tinctoria	(c)
Barleria buvıfolia	(o)
Mimosa pudica	(c)
Cassia tora	(f)
Cassia occidentalıs	(vf)
Desmodium triflorum	(o)
Brewia hirsuta	(c)
Hibuscus micranthus	(c)
Emblica offcinalis	(c)
Phyllanthus simplex	(c)
Polygala tranquebarica	(c)
Waltheria indica	(c))
Alysicarpus monififer	(c)
Corchorus acutangulus	(c)
Blumee obliqua	(c)
Dipteracanthus prostratus	(r)
Dicerma biarticulatum	(r)
Aerva lanatta	(r)
Achyranthus aspera	(r)
Sida cordifolia	(r)
Boerhavia diffusa	(la)
Iondium leptorhizum	(c)
Tridox procumbens	(c)
Justicia diffusa	(c)
Abuttlon indicum	(r)
Sabira plebeia	(r)
Spermacoce hispida	(r)
Polycarpaea corymbosa	(c)
Phaseolus trilobus	(c)

IV. D. Grasses—

Neteropogon contortus	(c)
Aristida depressa	(c)
Cynodon dactylon	(f)
Cenchrus citiaris	(f)
Cenchrus citiaris	(f)
Imperata cylondrica	(c)
	Eleusine indica
Eleusine indica	(e)
Themeda triandra	(e)

V. Climbers—

Acacia pennata	(c)
Pterolobium indicum	(f)
Toddalia aculesta	(o)
Arus oprecatorius	(c)
Conbretum latifolium	(c)
Cenhalandra indica	(r)
Cissus quadrangularis	(c)
Acacia instia	(f)
Derris scandens	(c)
Asparagus racemosus	(f)
Vitis carnosa	(c)
Tylopora indica	(c)
Zizhyphus oenophilia	(c)
Tinospora cordifolia	(f)
Ciw sampelos convolulacea	(c)
Smilaz ovalifolia	(c)
Cassyth filirormis	(r)

88. Epiphytes are generally absent. Stem parasites such as Loranthus, Viscum, etc., are fairly common.

89. In the plains forest skirting villages and towns the ecological succession has either been arrested or reversed due its easy assessibility and consequent vulnerabity to the bioticinfluences in the form of indiscreminate hacking theft heavy grazing, etc., The result is a deteriorated condition, the forest being mostly of the dry scrub type carrying stunted and ill developed stand of trees of little or no importance. In fact the following degraded stages are more commonly met with than the original type of forest.

(1) 6A/C2 DS1—Southern thorn scrub.

(2) 6A/*C*2/DS2—Southern Euphorbia scrub.

90. *6A/C2/DS1 Southern thorn scrub.*—This thorn scrub forest is a degraded stage due to maltreatment resulting in the formation of close, almost impendetrable thorny thickets 4—6 M. high not much different from the under growth, characteristic of the prevailing. Climax type in which the few surviving trees stand out here and there. Spiny climbers are common further degradation has resulted in sparse thickets 2-4 M. high in which grasses are more abundant.

The floristic composition remain essentially unaltered.

91. *Floristics :*

I/II Top Canophy/second stores—

Albizzia amara	(f)
Azadirachta indica	(r)
Chlorozylon swietenia	(c)
Wrightia tinctoria	(f)

III. Shrub—

Zizyphus xylopyrus	(c)
Dichrosteahy cinerea	(f)
Zeromphis spinora	(c)
Canthium dicoccum	(c)
Flacourtia indica	(f)
Capparis sepiaraia	(c)
Carrissa spinarum	(vf)
Euphorbia antiquorum	(c)

V. Climbers—

Pterolobium indicum	(f)
Acacia pennata	(c)
Memidesmus indica	(c)
Jacquemontia paniculata	(c)

Such type of forests occur at Komapuram, Neppugai and Senthengudi now handed over to TAFCORN.

92. *6A/C2/DS 2 Southern Euphorbia scrub.*—This forest type occurs in the plains of Avanam. The forest is of open and stunted character in which flesh Euphorbias are the most important species. The thorny Acacis and their associated are also present but are more than stunted and form rounded bushes. Much of the soil is bare but there is usually a thin cover of grasses.

93. *Floristics of this type are—*

I. Top Stroey—

Euphorbia tirucalli	(f)
Euphorbia antiquorum	(vf)

II. Second storey—

Dodonea viscosa	(f)
Cassia auriculta	(c)
Opuntia dillenii	(c)
Calotropis gigantha	(r)
Barleria buxifolia	(f)

IV. Grasses—

Cymbopogon colorutus	(o)
Heteropogen contortus	(c)
Aristida hystriz	(f)

V. Climbers—

Cissus quadrangularis	(f)
Hemidesmus indica	(c)

Most of these areas are converted into cashew plantations.

94. *Natural regeneration*—The soil is exposed and rendered barren in patches due to intensive grazing so the surface has become hard and caked condition inimical to the germination of seed and establishment of regeneration. Hence, natural regeneration of valuable species is generally far from satisfactory in this type of forest.

95. *Artificial Regeneration*—Planting up with commercial crop cashew has been taken up in these areas since 2056 and the results are striking where Kumri method of regeneration was employed.

96. *7/c Tropical Dry ever green forest.*—This type is found the coastal region of Kodaikadu where soil is deep and sandy. It is a low forest 7 to 10 M. high but forming a complete conopy consisting mostly of small coriaceous leaved evergreen trees with short holes and spreading crowns. The proportion of the deciduous species may be large cloally. There is no marked differentiation of canopy layers between the shrubby under wood which includes any spiny species and the top canopy. Climbers are numerous. Bamboos are absent. Grasses is present but not conspicuous. Most of the Forests have been much influenced by felling lopping and browsing and have become irregular, with open patches. The throny species have largly displaced the climax vegetation. This forest is characterised by the presence of dominants with low coppicing power. The most conspicuous species are Manilkara, Kexandra, Manilkara elangi, Memoyecylon, edule, Sapindus larginatus, etc.

97. *The floristics of the type are as follows:—*

I/II Top canopy-Second storey—

Manilkara hexandra	(r)
Ficus retusa	(r)
Ficus sibbosa	(r)
Manilkara elelgi	(c)-
Lepisanthes tetraphylla	(f)
Syzygium cumini	(c)
Putranjiva rozburghi	(c)
Strychnos nux-vomica	(c)
Strychnos nux-vomica	(c)
Sapindus emarginatus	(c)
Albizzie amara	(r)
Madhuke latifolia	(c)
Tamarindus indica	(r)
Cassia fistula	(c)
Salvadora indica	(c)
Diosphyrus montana	(r)
Maba buxifolia	(c)
Inga dulcis	(c)
Holarrhena antidysentorica	(c)
Streblus asper	(c)
Dischopis elliptica	(c)
Isonandra lanceslata	(r)
Sideroxylon tomentosum	(c)

III. Shrubs—

Memcylon edule	(f)
Memcylon umbellatum	(c)
Maba buxifolia	(r)
Webera corymbosa	(c)
Pavetta indica	(f)
Dodonia viscosa	(vf)
Calotropis gigantea	(c)
Drypetes sepiaria	(c)
Carrissa opaca	(c)
Cassia auriculata	(la)
Erythroxylon monogynum	(r)
Ixora arborea	(e)
Azimatetracantha	(c)
Bugonia myystax	(r)
Gmelina parvifolia	(c)
Glycosmis cochinchineensis	(c)
Canthium parviflorum	(c)

IV. Herbs—

Solanum trilobatum	(r)
Evoluvulous alsinoides	(e)
Merramia tridentata	(c)
Oldenlandia umbellata	(c)
Blepharis boerhaavivefolia	(r)
Cassia kleni	(r)
Pavonia zeylanica	(c)
Asystasfa ganetica	(e)
Zormia diphylla	(c)
Synostemon bacciforme	(r)
Barleria prionitis	(r)
Biophytum sensitinum	(r)

IV. B. Grasses—

Fimbristylis polytrichoides	(c)
Aristida depressa	(c)
Aristida byotrex	(c)
Cyperus difformis	(c)
Cynodon dactylon	(c)
Cyperus costaneous	(e)

V. Climbers—

Acacia instia	(f)
Pterolobium indicum	(c)
Derria acandens	(c)
Asparagus racemosus	(f)
Tinospora cordifolia	(c)
Leptadenia reticulata	(f)

98. In addition to the natural forests described in this chapter, the division contains extensive plantations of teak on the fringes of rivers and canals, casuarina on the porombokes and padugai lands. Coconut thopes, plantations of Eucalyptus, Bamboo, Dalbgegia sissoo and other miscellaneous species, etc., distributed over a wide range of localities.

99 A list of trees, shrubs, herbs and climbers found in this division is furnished in Appendix III.

Section-2—Injuries to which the crop is Liable.

100. The Chief factors affecting the forest growth the Division are these caused by human agency and natural causes. The important causes of damage to the mangroves are wind, rise of ground level, change of water course, erosion, grazing, inaucts, climbers, parasities and human activities.

Wind—

101. *Wind.*—Hot dry gales sweep the division during the summer aggrevating the wind condition. The division is prove to damage by cylones which develop due to the depressions in the Bay of Bengal. The prevalance of salt laden winds along the coastal area inhibits the establishment of Casuarina regeneration. Large quantity of sand are deposited in the mangroves during strong winds which bury the trees to a considerable height which is a common feature near the sea shore.

102. *Erosion*—The chief sources of erosion are floods, strong water currents and change of course of rivers, etc., in their direction of flow. New accretions and erosions are a common sight in Padugais, Sodiakudy, Gopalasamudram, Alakkudi and at Maharajapuram.

103. *Drought.*—Mortality in the younger Casuarina plantations in the Padugais and costal areas are some times caused by drought. Plants start drying up due to drought.

104. *Wild Animals.*—Rodents, Mares, Semi-wild cattle spotted deer, black buck, wild boars, cause a lot of damage by nibbing the seedlings. Ponies that are bred near point Calimere and allowed to run Wild in Kodiakadu reserve forests are a source of menace to the natural regeneration.

105. *Injuries caused by plants.*—Climbers, Acacia pennata, Pterolobium indicum, Acacia instia, Nemidesmus indica, Zizyphus oenoplia are a memance to both teak plantations and the natural growth on this division. The mangrove trees especially excoecaria agallocha are badly infested by the parasite viscum. Cassytha filifomis and Cascuta reflexa are other parasitic plants occuring in the mangrove forests. Lantana camara is also observed in Gopalasamudram and Sodiakudi plantations.

106. *Insects and Diseases.*—Casuarina is subject to attack by a few insect pests, grubs of the rhinoceros beetle, Oryctesrhinoceros bore through the stems, seedlings and cause drying up of the tips of the seedlings. Erachy tripes potentous is a cricket feeds on the needles of Casuarina and it attacks seedlings in the nurseries and young transplants Lecauim longulum is a scab insect attacking the younger seedlings. Arbella letramis is a border attacking the Casuarina plantations causing nortality to the seedlings. Since the attack is mostly confined to the root portion application of B.H.C. 10 per cent to soil before sowing the seeds in the nursery.

107. *Diseases in Coconut.*—The coconut palm is affected by a number of diseases which are responsible for economic losses. The commonoit in Thanjavur Division is the Thanjavur wilt disease. The details of various other diseases with their symptoms and control measures suggested are described in appendix.

108. *Human Agency.*—The poor economic condition of the people, the rights they enjoyed in the forest during the regime, lack of adequate alternate sources of firewood are the main reasons responsible for illicit removals of fuel, small timber and manure leaves from the forest.

109. *Fire.*—It is not common in this division. However adequate precautions have to be taken when raising plantations.

110. *Grazing.*—The present degraded condition of the forests is chiefly attributed to the evil effects of over grazing. Grazing is widely prevalent in the division. Apart from being inimical to regeneration it is largely responsible for compacting of soil. A statement showing grazing revenue and grazing incidence is furnished in appendix.

Section 3—Fauna.

111. The discontinuous forest blocks and the pressure of human population upon the forest resources are not condusive to the development of wild life. The elephant, tiger, Panther and Bison are totally unknown in this division.

112. In G.O. Ms. No. No. 1821, Agriculture, dated 13th June 1967, the Government have notified an area of 4271.82 acres of Kodiakadu Reserve Forests and its extensions as point Calimere Wild Life Sanctuary. The Government have also in their order No. 2871, Agriculture, dated 5th October 1967 approved the proposal of the Chief Conservator of Forests for the acquisition of six patta lands measuring 22.54 acres or 10 ha. of land situation in 133 Kodiakadu Village have been acquired as per award No. 6/69, dated 18th December 1968 of Land Acquisition Officer and Revenue Divisional Officer, Mannarkudi. Now in order to expand the sanctuary area Kodiakadu extension Forest Blocks IV 454.50 Acre and V—25.12 Acre taken over from Panchayat on 28th November 1981. Alavari poromboke 369.21 acres situated in Kodiakadu Reserved Forests 327.19 ha. or 812.15 acres from Vadaranyeswaran temple acquired on compensation.

113. Point Calimere Wild Life Sanctuary is unique in having a large concentration of black buck, Spotted deer, Jackal, Wild Pigs, Bonnet monkeys and Foxes.

114. Common rats, Mouse rats, bandicoots are common everywhere. Common grey striped Squirrels are found in gardens, grove and forests. Acquatic animal such as common otter (Lutra lutra) is found along the water and streams of Thalainayar (R.P. Great variety of fishes are found in estuaries of Muthupet and Thalainayar. Besides the usual varieties of sea-fish, the flying fish the kola are caught on the coast. The mair and seer fish in the lagoons, the catala, the Indian carp, the Gourami, Rohu, Mirgal are found in abundance in the rivers. Tortoise occur in the ponds and lakes where water is stagnated.

115. *Avifauns.*—The swamps of point Calimere abounds i n a considerable variety of interresting avifauna. Flamingoes visit these swamps in Thousands during wint r months. The following avifaunas are found in this division :—

1.	White cheeked bulbul	Melpaspes leucogenys.
2.	White browed bulbul	Pycnonotus leteolus.
3.	Common crow	Carcus splendens.
4.	Jungle crow	Carves macrorhynches.
5.	Indian cuckoo	Ceculus micrpterus.
6.	Hauk Cuckoo (Brain fever bird) ..	Ceculus varius.
7.	Indian courser	Cursorius coromandelicus.
8.	Hoepee	Upupa Epops.
9.	Pond heron	Arteela gravil.
10.	Lora	Aegithina tiphia.
11.	Erahminy kite	Haliasture indus.
12.	Pariah kite	Milvus migrans.
13.	White breasted king fisher	Vanellus indicus.
14.	Red wattled lapwing	Vanellus malabaricus.
15.	Yellow wattled Lapwing	Vanellus malabaricus.
16.	Common myna	Acridotheres tristis.
17.	Brahminy myna (Blackheaded) ..	Sturnus pagodarum.
18.	Greay headed myna	Sturnia malabarica.
19.	Spotted owlet	Athene brama.
20.	Born owl	Tyto alba.
21.	Rose ringed parakeet	Psittacula kramers.
22.	Blue rock pigeon	Columba livia gmelin.
23.	Magpic robin	Copsychus saularis.
24.	House sparrow	Passer domestious.
25.	Yellow throated sparrow	Jymnorhis xanthocollis.
26.	Wire tailed swallow	Hirundo smithii.
27.	Purple sunbird	Cinnyris asiaticus.
28.	Purple rumped sunbird	Cinnyris zeylonicus.
29.	Palm swift	Cypsiurus parvus.
30.	House swift	Apus affnis.
31.	King vulture	Torgos calvus.
32.	White backed vulture	Cype bengalensis.
33.	White scavanger vulture	Meophron percnopterus.
34.	Golden backed wood packer	Bracnypternus benghalensis.
35.	White eye	Zozterops palperbrosa.

116. In the open forests of Kodakadu and in the scrub forests of the plains the characteristic birds are :—

1.	Common babler	Turdoides caudatus.
2.	Jungle babler	Turdoides striatus.
3.	Redvented bulbul	Pycnonotus cafer.
4.	White bowed bulbul	Pycnonotus luteolus.
5.	Pied bushchat	Saxicola caprata.
6.	Common green bee eater	Merops orientalis.
7.	Large green bee eater	Meropsorientalis ceylonicus.
8.	Chestnut headed bee eater	Merops leschenaulti.
9.	Crow pheasant	Centropus sinensis.
10.	Stone curlew	Burhinus oedicnemus.
11.	Pied crusted cuckoo	Clamator jacobinus.
12.	Red winged crested cuckoo	Clamator coromandus.

13. Plaintive cuckoo	.. .. ..	Carcomantis merulinus.
14. Jerdon's chloropsis	.. .. ..	Chloropsis jerdeni.
15. Black dronge	.. .. ..	Dicrurus adsimilis.
16. White bellied drongo	.. .. ..	Dicrurus caerulescens.
17. Asby drongo	.. .. ..	Decuros leucophara.
18. Spotted dove	.. .. ..	Streptopelia chinensis.
19. Ringed dove	.. .. ..	Streptopelia decaoets.
20. Little brown dove	.. .. ..	Streptopelio sapegalensis.
21. Red turtle dove	.. .. ..	Streptopelia tranouebarica.
22. Crested serpent eagle	.. .. ..	Spilornis cheela.
23. Palla's fishing eagle	.. .. ..	Haliaeetus leucoryphus.
24. White breasted sea eagle	.. .. ..	Haliaeetus leucogaster.
25. Short toed eagle	.. .. ..	Circaetus Gallicus.
26. Tickl's flower pecker	.. .. ..	Dicaeum erythrorhynchos.
27. Grey jungle fowl	.. .. ..	Gallus sonneratii.
28. Paradise flycatcher	.. .. ..	Terpsiphone paradisi.
29. Fan tailed fly catcher	.. .. ..	Rhipidura albogularis.
30. Verditer fly catcher	.. .. ..	Muscicapa thalassina.
31. Rufous tailed fly catcher	.. ..	Muscicapa ruficanda.
32. Blue throted fly catcher	.. ..	Muscicapa rubeculoides rubeculiodes.
33. Red breasted fly catcher	.. ..	Muscicapa paya.
34. Pale harrier	.. .. ..	Circus macrourus.
35. Grey horn bill	.. .. ..	Tockus birostris.
36. Koel	.. .. ..	Eudynadmis scolopaceus.
37. Kestral	.. .. ..	Falco tinnunculus.
38. Black winged kite	.. .. ..	Elenus ceruleus.
39. Sky lark	.. .. ..	Mirsfra assraica.
40. Bush lark	.. .. ..	Mirsfra assraica.
41. Black bellied finch lark	.. ..	Eremopterix grisea.
42. Crested lark	.. .. ..	Galerida cristata.
43. Small minivet	.. .. ..	Pericrocotus cinnamomenus.
44. Orange minivet	.. .. ..	Pericrocotus flammeus.
45. Scarlet minivet	.. .. ..	Pericrotus flammeus.
46. Green billed malkoha	.. ..	Rhopodytes viridirostris.
47. Red headed merli	.. .. ..	Falce chicquera.
48. White threated munia	.. ..	Uroloncha malabarica.
49. White backed munia	.. ..	Uroloncha striata.
50. Spotted munia	.. .. ..	Uroloncha punciulata.
51. Jungle myna	.. .. ..	Acridopheres fuscus.
52. Common Indian night jar	.. ..	Carpimulgus asiaticus.
53. Chestnut bellied nuthatch	.. ..	Sitta castanea.
54. Great horned owl	.. .. ..	Budobubo.
55. Golden Oriole	.. .. ..	Oriolus oriolus.
56. Grey patridge	.. .. ..	Francolinu pondicerianus.
57. Green pigeon	.. .. ..	Treron phoenicophtera.
58. Indian pitta	.. .. ..	Pitta brachyruna.
59. Indian pipit	.. .. ..	Anthus rufulus.
60. Blossom headed parakeet	.. ..	Psittacula cyanocephala.
61. Blue winged parakeet	.. ..	Psittacula Columboides.
62. Tree pie	.. .. ..	Dendrocitta viabunds.
63. Rain quail	.. .. ..	Cothurnix coromandelica.
64. Button quail	.. .. ..	Turnix tanki.
65. Indian robin	.. .. ..	Saxicoloidus fulicata.

66.	Indian roller (Blue jay)	Coracias benghalensis.
67.	Shikra	Accipiter badious.
68.	Wood shrike	Tephrodornis pondicerianus affinis.
69.	Bay bucked shrike	Lanius vittatus.
70.	Rufous backed shrike	Lanius schach.
71.	Ashy swallo shrike	Artamus fuscus.
72.	Black headed shrike	Coracina melanoptera.
73.	Grey shrike	Lanius excubitor.
74.	Tailor bird	Orthotomus sutorious.
75.	Grey tit	Parus major.
76.	Whistling thrush.	Myophonous caeruleus
77.	Orange headed ground thrush	Geokichala citrina.
78.	Pied ground thrush	Geokichla wardi
79.	White wagtail	Motacilla alba.
80.	Large pied wagtail	Motacilla cinerea.
81.	Grew pied wagtail	Motacilla maderaspatensis.
82.	Yellow wagtail	Motacilla fiaba.
83.	Ashy wren earbler	Prinia Socialis.
84.	Dull green leaf warbler	Phylloscopus procholeideaviridanus.
85.	Thick billed warbler	Phragmapicels sedon.
86.	Blith's reed warbler	Acrocophulus dumetetrus.
87.	Paddy field warbler	Acrocophlus ugricols.
88.	Common weaver bird (Baya)	Ploceus phillipinus.
89.	White throat lesser	Sylvia curruca.

117. Migratory birds that are found in the lagoons of Muthupet Thalainayar and the great swamp of Point Calimere are :—

1.	Avocet	Recurvirostra avosetta.
2.	Chestnut bittern	Ixobrychus cinnamomeous.
3.	Curlew	Numenius arquata.
4.	Stone curlew	Burhinus oeticnemus.
5.	Little cormonant	Phalacrocorax niget.
6.	Large cormorant	Phalacrocoirax carbo.
7.	Dabchick	Podiceps ruficollis.
8.	Dunlin	Erollia alpina.
9.	Darter (snake bird)	Anhinga melangaster.
10.	Little egret	Egretta garzetta
11.	Large egret	Egretta alba.
12.	Cattle egret	Babulcus ibis.
13.	Flamingo	Phoeni copterus roscus.
14.	Bar headed goose	Ancer indicus.
15.	Black headed gull	Larus ridibundus.
16.	Brown headed gull	Larus brunnicephalus.
17.	Lesser black headed gull	Larus fuscus.
18.	Greater black headed gull	Larus ichth yaetus.
19.	Gadwall	Anas strepara.
20.	Black tailed godwit	Limosa limosa.
21.	Bar tailed godwit	Limosa lappiica.
22.	Pond heron	Ardeola grayil.
23.	Grey heron	Ardea cinerea.
24.	Night heron	Nycticorax nycticorax.
25.	Indian reef heron	Egretta gularis.
26.	White obibis	Threskiornis melanocephalus.

27. Knot .. .. Calidris canutus canutus.
28. Commom king fisher .. .. .. Alcedo althis.
29. Pied king fisher .. .. Ceryle rudis.
30. White breasted king fisher .. .. Nalcyon smyrens s.
31. Indian three-toed king fisher .. .. Ceyx erithacus.
32. Brown headed stook billed king fisher. Pelargopsis capensis.
33. Indian moorhen .. .. .. Gallinula chloropus.
34. Purple moorhen .. .. .. Perphyrio perphyrio.
35. Oyster catcher .. .. Haematopus ostralegus.
36. Brown fish owl .. .. .. Bubo zeylonesis.
37. Pintail .. .. Anas acuta.
38. Red necked phalarope .. .. .. Phalaropus labatus.
39. Pratincole .. .. Glarcola lactea.
40. Grey pelican .. .. Pelacanus philippensis.
41. Golden plover .. .. Puluvialis dominica.
42. Eastern golden plover .. .. .. Pluvialis docinica.
43. Kentish plover .. .. Charadrius alexandrinus.
44. Grey plover .. .. Pluvialis squatarola.
45. Large sand plover .. .. .. Charadrine taschenavli.
46. Great stone plover .. .. .. Esacus recurvirostris.
47. Little ringed plover .. .. .. Charadrius dubius.
48. White eyed pochard .. .. .. Aythya nyroca.
49. Ruddy sheldrake .. .. .. Tadorna ferruginea.
50. Ruff and reeve .. .. .. Philomachus pugnax.
51. Common sand piper .. .. .. Trginga lypolences.
52. Narsh sand piper .. .. .. Trginga stagnatilis.
53. Curlew sand piper .. .. .. Calidris testaccus.
54. Broad billed sand piper .. .. Limicola felsinellus.
55. Terek sand piper .. .. .. Tringa terek.
56. Spotted sand piper .. .. .. Tringa glareola.
57. Green sand piper .. .. .. Tringa ochropus.
58. Red shank .. .. Tringa totanus.
59. Little stint .. .. Calidris minutus.
60. Temminek's stint .. .. .. Calidris temminckii.
61. Green shank .. .. Tringa nebularia.
62. Shevellar .. .. Anas clypeats.
63. Black winged stilt .. .. .. Himantopus himatopus.
64. Spot bill .. .. Anas poecilorhyncha.
65. Jack snipe .. .. Lymnocryptes minimus.
66. Fan tail snipe .. .. Capella gallinago.
67. Spoon bill .. .. Platalea leucorodia.
68. Open billed stork .. .. .. Anastomus oscitans.
69. Painted stork .. .. Ibis leucocephalus.

70. River tern	Sterna surantia.
71. Capian tern	Gydroprogne caspia.
72. Red sea crested tern	Talassous bengalensis.
73. Black bollied tern	Sterna acuticauda.
74. Little tern	Sterns albifrons sinensis.
75. Whiskered tern	Chlidonias hybride.
76. Gull billed tern	Gelochelidon nilotica.
77. Gargany teal	Anas querquedula.
78. Whistling teal	Dendrocygna javanica.
79. Common teal	Anas crecca.
80. Cotton teal	Nettapus coromandelianus.
81. Turn stone	Strepsilas.
82. Whimbrel	Numenius phaeopus.
83. White breasted water hen	Amarornis phoenicurus.

CHAPTER III.

UTILISATION OF THE PRODUCE.

Section—I. Agricultural Customs and wants of population.

Agricultural Customs—

118. Agriculture is the prodonimant occupation of the people. Before the advent of Cauvery-Mettur project nine taluks out of elevan had the benefit of Cauvery irrigation. A major portion of Pattukkottai taluk was brought under plough after the advent of Cauvery—Mettur Project. Two main seasons of Cultivation are named after the varieties of paddy viz Kuruvai and Samba. Besides Paddy, Sugar cane and Banana are raised in wet lands which pay rich divident. The establishment of Sugar Mills at Thiruvarur and Budhalur has ensured a steady price for the sugar cane growers. Coconut plantations have been raised all along the margin of cauvery river and its branches as well as along the sea cost in Pattukottai Taluk.

119. Cholam, Kambu, Ragi, Samai, ground nut cotton, coster, Gingelli, Thinai are the chief crops of dry tracts in Pattukottai taluk. The tree crops are mainly Casuarina raised by the agriculturists Principally on the Padugai lands of Cauvery and all along the sea coast. Plantations of Casuarina and Cashew are not uncommon in the interior parts. The farmers are well aware of the scientific methods of cultivation such as sowing the improved strains and varieties of seeds reduction of seed rate in nurseries. Economic planting of seedlings the use of better kind of manure and implements and elimination of pests and diseases by crop protective measures. The use of tractor with its accessories for deep ploughing is quite common in this region. Tobacco cultivation is the main occupation in the villages adjoining the Kodikadu reserved forests.

120. Cattle are kept in large numbers mainly for dung as they are otherwise not of much use. The cattle are generally samll and weddy. The cows are poor milkers and the bullocks are poor working animals. Sheep and goats are also reared as a subsidiary occupation to supplement the agricultural income.

121. Poultry farming, bee keeping and the production of fish, milk and eggs are getting popular. There is a cattle breeding farm functioning at Orathanad to improve the quality of the cattle.

122. *Population.*—According to the 1981 Census the population figures of the Thanjavur District are given below:—

POPULATION.

123. According to the 1971, 1981 Census the population figures of the Thanjavur district are given under :—

District.	*Area in Sq. Km.*	*Pouplation 1971.*	*Density per Sq. Km. 1971.*	*Population 1981.*	*Density per Sq. Km. 1981.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Thanjavur	9,735 5,315.60	38,40,732	395	40,57,230	764	..

124. There is a significant increase in the population which reflects the general trend of the country. Wants of polpulation :—

125. The main requirements of the local population in respect of forest produce are:—

(1) Firewood for domestic consumption.

(2) Small timbers for agricultural implements and building purposes.

(3) Bamboos for construction and cottage, industries like basket weaving, etc.

(4) Grazing.

(5) Green manure leaf.

(6) Fodder and thatch material.

(7) Thorn for fencing material.

(8) Minor Forest produce.

(9) Mines and minerals.

126. *Firewood.*—There is a keen demand for firewood in this Division and the villagers living in the vicinity of the forests never pay for firewood and prefer to pilfer from the forests. The villagers living far away from the forests use stalks of dry crops and cow dung cakes. The fuel extracted from the mangrove forests and Casuarina plantations raised by Forest Department meet the requirement of Thanjavur District only to a very small extent. Apart from being used as domestic fuel a small quantity of firewood is utilised in brick and lime kilns. Most of the demand for fuel is met with the trees grown in Patta lands and porambokes. The vast Casuarina plantations and cashew plantations raised by private people in their lands meet the local demand to a great extent. The demand for firewood in the towns is getting reduced to some extent due to the introduction of 'LECO' supplied by the Neyveli Lignite Corporation which is getting popular. Gas is also used as domestic fuel in the houses of more affluent classes out the supply is extremely limited.

127. Casuarina is most valued as fuel due to its high calorfic value. Needles pruned branches roots and stumps of Casuarina are also favoured as fuel. Tamarind, Velvelan, Kodukapuli and Vagai obtained mainly from the unreserves and patta lands are preferred for use in brick and lime kilns in addition to phoemix and palmyrah st mps due to their high calorific value. Among the species occuring in the natural forests these that are preferred as firewood are Acacia planifrons, Acacia leucophloea, Acacia Sundra Acacia monophylla, Albizzia amara, canthius dicoucum Inga dulco, etc.

128. Timber is not available in the forests of this division. The local requirements are met by imports from Coimbatore, Mettupalayam, Pollachi, Nagercoil, Tirunelveli and from Kerala markets. Thespesia populaea, Colophyllum inophyllum, grown locally in the coastal villages provide ribs for boat buildings.

129. The normal requirements of the ryots are ploughs, plough shares, spokes shafts nubs, cart wheels and small posts rafters and reepers for the house. The timber requirements are mostly meet by Acacia arabica and other suitable species such as Azadirachta indica, Manggifera Artocarpus, Integrifolia, Thesepesia populnea, Collophyllum inophyllum, Casuarina equisetofelia, Broossus flabellifer Morinda tinctoria growing in villages and lands. In the rural areas Palmyrah rafters and posts are used for house construction in addition to the Casuarina and bamboo rafters and ploes. The villagers living in the vicinity of the forests usually get their requirements from the nearby forests mostly by illicit removals. The species commonly exploited are Acacia arabica. A leucohplaea, A sundra, A planifrons, Albizzia lebbeck, A ermara, Azadirachta indica and Chlorexylon sweitania. Though Casuarina is much fencied an fuel it is also used for constructional purposes such as posts, ridge places wall plate rafters masts for country boats and as punting plos for rail boats and for scaff-folding.

130. *Bamboo*—This is the poor man's timber and widely used by villagers as Poles and roffing material for constructional purposes. There is keen demand for bamboos for making thatties, mats and baskets and as props in plantation topes, betal gardens as well as fencing material. The bulk of the requirement is obtained from the bamboos grown in patta lands and porombokes. Forests of this division hardly meet the demand though bamboo is grown to a small extent along the banks of streams canals etc., which is almost negligiable.

131. *Grazing.*—Grazing is by far the heaviest demand on the forest since there has been an alarming increase in the number of cattle that resort to the forests. Cattle in Thanjavur district migrate of South Arcot district is search of pasture when the wet lands are under cultivation. Cattle belonging to village adjoining Muthupet, Thalanayar and Kodiakadu are allowed to graze in these forests under permit. "Semi wild" cattle that are present in Kodiakadu and Muthupet reserved forests cause considerable damage to the natural forests. The semi wild cattle are actually village cattle that are allowed to roam in the forests at their will without any grazier accompanying them. On an average about cow units graze in the forests of this division every year. The incidence of grazing is has for every cow unit.

132. The incidence of grazing in Thanjavur Forest Division from 70-71 to 81-82 is given in Appendix No. IX Grazing from Ramanathapuram i.e. "Konars" came to Pattukkottai taluk in search of babul and Odai fodder for their cattle mainly sheep and goat during agriculture season and pen their cattle in the field.

133. *Green manure leaf.*—There is a keen demand for green manure leaves for wet and tobacco cultivation. The forests of Thanjavur Division hardly meet this demand. Chemical fertilizers and Farm yard manure are commonly used by the agriculturists. Green manure plants are also widely cultivated in the patta fields. Species such as Gliricidia maculata, Sesoaniaindica, Thespesia, populanea, Dod onea Viscoasa, Calotropis gigantea Poinciana olata, Azadirachta indica, Ficus bangalensis, Inga dulce. Memy ceylon edule Samanea saman, Syzyglum cunini, Lannia grandis, Inoigophora Pulchella are popularly used as green manure.

134. Cassia tera, Coccidentlis, C. Siamca, etc., are rarely used. The removal of green manure from the forests is only on a limited scale.

135. *Fodder and thatch material.*—The villagers living close to forests require fodder grass for staff feeding. This was permitted free of cost for bonafide domestic use and the same is removed in head loads.

136. Palmyrah leaf is the most popular and highly economical roofing material for cheap houses. The villagers pack it in such a way that each leaf overlaps the other beneath it over closely woven bamboo reepers. This serves as an ideal non-conducting material insulating the interior from extremes of heat and cold and reasonably safe from rain for a few years. This is also a material which is abundant in its supply and removed in head loads. Its removal is regulated under cover of permits issued by the lessees of minor forest produce who but the right to remove this produce with other items of minor forest produce.

137. The use of Palmyrah leaves as thatching material for huts is common in Pattukkottai and other coastal regions near Vedaranyam. Large number ofPalmyrah trees found in Chatram forests and on patta lands meet the demand for the thatching material to a great extent.

138. *Thorn and fencing materials.*—The demand for throns and fencing material is keen and widespread in certain parts of the division. This demand is met to a small extent from Bamboos grown in private holdings. Palmyrah stalks and leaves are popular as fencing materials in villages.

139. *Minor Forest Produce.*—Fishing is the main occupation for many villagers who live in and around Thalanayar and Muthupet. In Muthupet reserved forest fishing is free in the lagoons. Fishing in pits, puddles, small streams and portion of the Korayar passing through Government forests is leased out to the fisherman's Co-operative Societies by negotiation.

140. Other important items of minor forest produce are cashew, avaram bark (cassia auriculata) Konnai bark (Cassia fistula) which are used as tanning materials in the tanneries in Tiruchirappalli and Dindigul. Though the tannin content is very high in mangrove species the cost of extraction and transport is prohibitive. Pongam (Pemgamia Pinnata) ettikottai (strychnes nux-vomica) nellikkai (Emblica offcinalis) vila (Feronia elephartum) wood apple or vilvam (Aegea maneseos) Elendai (Zizyplus) nauratiana) Kilakai (Carrissa Caraneadus) jack orpial (Atro carpus heterophyllus) Tamarind (Tamarindus indica) Neem (Azadirachta indica) Sundaikai (Solanum Pubescens) Elluppai (Maduka latifolia) yield fruits of medicinal and edible value. Leaves and huts of coconut and Palmyrah Phoenix leaves, Gallnut, honey and wax are collected as Minor Forest produce which have got keen demand.

141. *Mines and Minerals.*—Sand stones occur near Vallam and Thanjavur which are fit for building construction. Kankar found near Alakkudi in Sirkali which is high in lime is used for the manufacture of lime. Yellow ochre is spread over small areas west of Vallam and deposits of soda occur on the Tiruchirappalli border south of the Cauvery.

142. *Industries and their needs.*—Thanjavur district is predominately an agricultural district in which about 70 per cent of the population are agriculturists. There are more than 1,000 rich mills big and small scattered all over the district which provide employment for a large number of people. Each taluk is having one or two modern rice mills and paddy driers installed by the Food Corporation of India. There are sugar mills at Thiruvarur and Budhalur. Cottage Industries though employing a small number are nevertheless noted for their artistic merit and excellence. There is a working unit of Tamil Nadu Small Scale Industries Corporation at Mannargudi Fishing is an important industry in the coastal villages of Thanjavur district Muthupet, Thalainayar, Kodiakadu, Vedaranyam, Adirampattinam, Pudupattinam Kaveri Pattinam, Tranquebar, Nagapattinam, etc., where Markkayars monopolise this trade.

143. The Principal cottage industries are silk and cotton weaving in Thanjavur, Ayyampettai, Kumbakonam, Kuttalam and Koranad. The Thanjavur district even today stands foremost in South India in the varieties of the fabrics woven in silk, cotton and lace in designs of the pattern employed and in the artistic skill exhibited in workmanship. Koranad is noted for " Kottadi " sarees, Ayampettai for the manufacture is ' Kunthi ", Kumbakonam and Mannargudi for metalware where the metals used are generally brass, bronze and tin and copper. Thanjavur is equally famous for its industries like pith work ornamental fans, scented bathies, engraved and in-laid work and musical instruments. Nagore is famous for ornamental fans and fancy boxes made out of Palmyrah leaves which are artistically painted and decorated with gold foils and threads, fancy boxes, doils, toys and rocking dolls. Nagapattin m is reputed for the manufacture oj excellent steel trunks, brief baks, cash boxes, despatch boxes, etc.. weaving of Kalis in Nannilam taluk is als well known.

144. Next to handloom industry comes the mat industry which employee a large number of people. Mats are chiefly made of Korai besides screw pine Palm leaf and coconut leaf. The Korai is cut when green and longitudinally split into fibres and then dried and preserved and just before using are scaked in water. They are afterwards dyed in synthetic colours of yellow red and green and dried again before they are woven. Sirkali, Senthangudi, Amikaramchatram are the chief centres for the mat industry. The mats are in great demand not only in this district but also in other places outside the district.

145. Some other industries found in the district are pettery, basket making rattan work and making of fancy boxes of palmyrah leaves, reed thaties and fishing nets. Coleroon is noted for ratten works. One of the industries which has great potentiality is the fibre industry which is not exploited to the best advantage even though coconut alone and Palmyrah are found in abundance.

146. Toys of different kinds are made at Thanjavur, some of them crude and other artistic. Of the former kind are the well known Thanjavur rocking dolls made of paper and provided with rounded bottoms of clay and the weight of the clay at the bottom makes them assumed always an erect position. Of the later kind are the fine paper toys of realistic appearance of fruits, animal and human beings. There are also goldsmiths, Painters, wood carvers and makers of idols. The lapidarines of Thanjavur, Kumbakonam and Vallam work the Vallam crystals into various objects like spectacle lenses, beads coloured stones, etc., The manufacture of crayers at Kumbakonam using gypsum and other small industries like printing and oil pressing deserve special mention.

147. Boat building is common in Muthupet, utilising the local timber species such as Thespesia populnea, Calophyllum, inophyllum, Casuarina and Artocarpus along with the imported teak.

148. The Vedarnayam Salt industry near Kodikkaradu is a major industry providing job opportunities to a considerable number of people. Salt is manufactured by retaining the sea water to a depth of 60 Cms. Over a considerable area enclosed by low earthern banks which when the beds are filled are closed to prevent the water from flowing back into the sea.

149. There are no industries worth mentioning in this district based on forest products.

150. *Lime and brick kilns.*—These are small industries which consumes a large quantity of firewood. Cheap kin d of fuel is preferred for lime kilns. Stumps of dates (phonenix humilis) echan (phoenix acaulis) and Kalli (Euphorbia species) needles of Casuarina, Palmyrah leaves are widely used. Fuel of high calorific value with longer burning capacity is required for brick kilns. Brick kilns consume most of the mangrove fuel. Other species which are commonly used as fuel brick kiln are Tamarind, stumps of Palmyrah, Kodukapuli, Casuarina, etc., There are quite a large number of brick kilns near Muthupet and Coleroon.

Section—2—Market and Marketable Products.

151. *Markets .*—The base markets for Casuarina fuel removed from departmental plantations are located at Pattukkottai, Muthupet, Kumbakonam, Maiyaladuthurai, Sirkali, Thiruthuraipoondi, etc., Here the contracts have big depots and they transact business with merchants of distant external market. Casuarina wood has got a ready market at Madras, where it fetches a high price than in the local market. The market for fuel obtained from the mangrove forest are chiefly lccated at Muthupet and Pattukkottai.

152. *Marketable Products* :—The only marketable produce are firewood small timber cashew and minor Forest produce.

153. *Firewood.*—The reserve Forest of this division cater very little to the needs of the public. The price of the firewood has shot up very much during the last decade since firewood is the major source of fuel for most of the people in the villages and towns. Only a small extent of popula

tion use other source of fuel such as Kerosene, gas, leco, agricultural waste, cowdung cakes, etc., Kumbakonam and Thanjavur being far away from the forests consume a large quantity of Casuarina fuel obtained from the departmental plantations as well as innumerable small private plantations in Pattukkottai and other coastal taluks of Thanjavur District such as Sirkali, Mayiladuthurai, Nannilam, Nagapattinam and Thiruthur ipoondi.. Despite these big consuming centres Csuarina wood is exported to Madras city as billets and posts as the price fetched is higher there.

154. The spurt in demand for fuel and firewood is accelerated due to sleep rise in population and the numerous brick and lime kilns that have cropped up all over to cater the requirements of the over growing need of the building activities.

155. There is a keen demand for the fuel for use in the brick kilns. Firewood is sold in market in bulk on weight basis. The population of Thanjavur district according to 1981 census is 40,57,230. Putting the annual per capital requirements for household consumption at 1.0 tonne the annual firewood requirements of the district for household consumption alone comes to 4.05 lakh tones. The industrial establishments and floating population may require roughly another 1.95 lakh tonnes per year.

156. *Small timber* :—Quantity of small timber obtained from forests is meagre which is consumed largely by agriculturists for their uses. Further ryots grow their own timber in their patta lands to meet their demands.

157. *Fishing* :—It is one of the important items of minor forest produce in this division along the coastal villages such as Muthupet, Thalainayar, Vedaranyam, Kodiakadu, Adirampattinam, Kaveripattinam and they are consumed locally and sold in the nearby shandies besides a large quantity exported to Madras. In Muthupet reserved forest fishing in free in the lagoon as per Chief Conservator's Proceedings Misc. No. 136, dated 28th April to the fisherman of Muthupet and adjoining village. Fishing in pit. Puddles small streams and portion of the Korayar through Muthupet reserved forests is leased out to the Fisherman Co-operative society by negotiations. The right to fish in the tanks and streams of chatram forests are sold in auction annually

158. Tanning materials such as Avaram bark, Karnai bark are sent to Madras. All other items of minor Forest produce such as Tamarind, Kala fruits, vila, Sundakai, Illupai, Etitkai Soapnut, Seekai, Elanthai, honey and wax Pungam and neem and naval fruits are consumed locally and sold in nearby shandies. Coconut from the topes in Padugais of Sirkali, Mayiladuthurai, Thiruthuraipoondi, Pattukkottai taluks are consumes locally to same extent and exported to outside markets also. Many fruits grown on the groves and gardens of private sholdings are consumed locally. The usufructs and leaves of Palmyrah grown in forests as well as in private lands are utilised locally.

Section 3—Limes of Export.

159. The division is well served with a net work of roads, railways and sea.

160. *Railways*:—The following is the main line that traverse the division—

(1) Main line—

(2) Tiruchirappalli—Madras—Main Line.

(3) Tiruchirappalli—Erode—Broad guage Line.

Branch Line :—

(1) Myiladuthurai—Tranqubar—Meter guage.

(2) Thiruthuraipoondi—Point Calimere—Meter guage.

(3) Mayiladuthurai—Peralam—Karaikal—Metre guage.

(4) Thanjavur—Needamangalam—Thiruvarur—Nagoor—Metre guage.

(5) Needamangalam—Mannargudi—Not functioning—Metre guage.

(6) Thiruvarur—Thiruthuraipoondi—Not functioning—Metre guage.

(7) Thiruthuraipoondi—Pattukkottai—Aranthangi—Karaikkudi—Metre guage.

161. *Roads* :—The division is well served with a net work of roads which are generally in good condition.

Trunk roads :—The southern trunk road from Madras closely follows the railway through Tiruchirappalli. Other important trunk roads are Tiruchirappalli—Thanjavur—Kumbakonam—Mayiladuthurai—Chidambaram road and Tiruchirappalli—Ariyalur—Chidambaram road.

162. *Other roads.*—Through out the district there is a net work of feeder roads which serve to transport forest. Produce from the site of exploitation to the trunk roads. Pattukottai range is well served by a net work of district and other roads raditating from rail heads which facilities transport of fuel. All the roads are kept in a good condition by the Railway Department. There are no forest road in the division.

163. *Waterways.*—Both Thalaniayar and Muthupet reserved forests are connected to the local markets by navigable channels. There are the adappar and Nellar rivers in Thalanaiyar in addition to Vedaranayam. Nagapattinam channel and Koraiyar Pomaniyar in Muthupet reserved forest which are navigable. Fuel exploited from mangrove forests of Muthupet is transported by boats through rivers, streams and lagoons to the main land.

Section 4—Methods of Exploitation and their Cost.

164. All the forest products are collected by contractors using manual labour. No machinery or modern tools are used for exploitation.

165. *Casuarina fuel.*—Casuarina plantations are worked through the agency of contractors who organise labour to fell and remove the trees. Casuarina coupes of this division lie mainly on the plain portions and there is a good system of roads which facilitates exploitation and transport of firewood. Inside the coupes the contractors generally lay out extraction paths. Hand saw is used for felling the trees and billeting and bill books are used for pruning the side branches. The trees which are long and straight are transported and sold as poles. The other trees are sawn into billets of about 1 metre length and stacked and transported by bullocks carts to the nearby market. Casuarina is an usuallystacked in 3 m long 1.2 m tall and 0.6 m broad staks each stacks being taken as one tonne for purposes of trading.

166. The contractors of Casuarina coupes have to clearfell all the miscellaneous growth and bushes in the plantations. In recent years there is a steep increase in the price of firewood in markets conciding with general increase of fuel (split) at Thanjavur and Kumbakonam is about Rs. 450 per tonne. The cost of a well grown good sized straight Casuarina pole varies from Rs. 10 to Rs. 100 since it is used as constructional timber as post, ridge, piece, scaffolding material, vast for boal, etc., and for punting the country boat.

167. *Cashew.*—The right to collect cashew nut from the cashew plantations is being leased out annually to contractors who engage necessary staff and labour for protection, collection and marketting. The fruits with the nuts are collected from the trees before they fall after ripening. The nuts are removed from the fruits manually, dried and sold. The fruits are sold in the villages and nearby towns and the unsold fruits are heaped up and motted for manure.

168. *Other minor Forest produce.*—The right to collect the minor forest produce is leased out to the contractors annually in open auction. The lease period is from 1st July to 30th June, of the suceeding year. Economically important forest produce like avaram bark Elandai cowdung, Palmyrah and coconut leaves are sold separately, each reserved forest being the lease unit. The right of fishing in the tanks and streams of chatram forest is sold as a separate unit by the District Forest Officer.

169. Fishing in Talanaiayar reserved forest and adjoining unreserves is leased out by the Forest Department annually. The right of fishing in Muthupet reserved forest is given on negotation to the fishermens co-operative societies. The cost of collection and the market price for some of the minor forest product is furnished below :—

	Collection charges.	*Sellinng rate.*
(1)	(2)	(3)
1. Elandai	0.20 per litre	0.75 litre
2.Avaram bark	0.25 per litre	0.75 Kg.
3. Cowdung	0.30 litre	0.80 basket.
4. Pachai	0.25 litre	0.90 litre.

170. *Grazing.*—The grazing year commences from 1st July to 30th June of the succeeding year. Grazing is regulated by issue of permits. The grazing fees currently levied are as follows per head of cattle :—

		RS.
1. Cow	.. ..	2.00
2. Sheep	.. ..	1.00
3. Buffalo	.. ..	4.00
4. Ass or horse	.. ..	4.00
5. Elephant	.. ..	30.00

171. Plantations and worked fuel coupes are closed to grazing for a period of 5 years including the year of formation or felling.

172. There are no minerals worth mentioning in this District.

Section 5—Past and Current Prices.

173. *Firewood.*—A detailed statement showing the areas sold and price per hectare obtained from the mangrove fuel coupes of the division from 1970-71 to 1974-75 is furnished in Appendix. The maximum price was obtained during 1974-75 is 33.45 ha. fetched a sum of Rs. 18,000 which works out Rs. 323 (approximate) per hectare. From 1975-76 onwards all the mangrove coupe leases were stopped and the mangrove reserves were declared as natural reserves by Chief Conservator of Forest's No. R. Dis. 19032/74K4, dated 13th March 1975 and further working of coupes have been stopped.

174. *Casuarina fuel.*—Details of Casuarina copues sold and Revenue realised each year from 1978-81 to 1882-83 are given in appendix. The average price per hectare during 1979-80 at Pudupattinam. Bit I was Rs. 17,890.41 which indicate the upward trend of price for Casuarina fuel due to the increasing demand.

175. *Minor Forest produce.*—A statement of revenue obtained by sale of different minor forest produce from 1970-71 to 1982-83 is provided in appendix.

176. The lack of demand for the minor forest product in this division has resulted in the steady and gradual decline of price during the recent years. During 1976-77 an amount of Rs 18,722 was realised which is by far the maximum as against Rs. 3,030 obtained during 1982-83.

177. *Fishing leases.*—Crop failure due to vagaries of monsoon and increased realisation of food value of fish and general increase in population are some of the factors which contributed to stepping up of the prices in the fishery leased during the recent years. Paragraph of 380, of part furnishes the revenue realised by the sale by the sale of different fishery units from 1970-71 to 1982-83.

CHAPTER IV.

STAFF AND LABOUR SUPPLY.

Section I—Staff.

178. The establishment of Thanjavur Forest Division consists of the staff of the District Forest Office at Thanjavur, the staff attached to the different ranges.

179. The establihsment of the Division as it stood as on 1st March 1983 is given in the following statement :—

Office establishment—

(*a*) District Forest Officer.

Serial number.	*Name of the post.*	*Permanent.*	*Temporary.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)
1	District Forest Officer	1	..	..
2	Headclerk Post upgraded to Superintendent ..	1		..
3	Assistant (Junior Accountant)	1	..	..
4	Assistant	1	..	..
5	Junior Assistant	4	..	..
6	Typist	1	..	..
7	Draughtsman Grade III	1	..	..
8	Jeep Driver	1	..	..
9	Basic Servant	3	..	.
10	Office watchman	1	..	..
	Total ..	15	..	..

B. Range Officer.

Serial number.	Name of the Range.	Junior Assistant.		Tally Clerk.		Peon-Watchman.		Driver.	Cleaner.
		Permanent.	Temporary.	Permanent.	Temporary.	Permanent.	Temporary.	Permanent.	Temporary.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1	Thanjavur	1	..	..	1	..	..	1	1
2	Kumbakonam	1	..	..	..	..	..	1	..
3	Pattukottai	1	..	..	..	..	..	..	..
4	Sirkali	1	..	..	1	..	..	..	..
5	Mannargudi	1	..	..	..	..	..	..	..
6	Chidambaram	1	..	..	..	1	..	..	..
7	Vedaranyam	1	..	..	..	..	1	..	..

180. Statement showing Establishment of Executive and Protective.

Staff in Thanjavur Division.

Serial number.	Name of the Range.	Range Officers.		Forester.		Forest guards.		Reserve watcher.		Total.	Remarks.
		Permanent.	Temporary.	Permanent.	Temporary.	Permanent.	Temporary.	Permanent.	Temporary.		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1	Thanjavur	1	..	1	3	5	2	..	..	12	
2	Kumbakonam	1	..	5	..	5	..	..	1	12	
3	Pattukottai	1	..	2	..	5	..	..	4	12	
4	Sirkali	1	..	3	1	4	..	..	2	11	
5	Mannargudi	1	..	2	..	3	..	..	..	6	
6	Chidambaram	1	..	1	1	..	..	..	1	8	
7	Vedaranyam	1	..	3	..	6	..	..	1	11	One of the watcher is Sweeper.
	Total ..	7	..	17	5	28	2	..	9	70	

181. Besides the above mentioned territorial establishment there is a Social forestry Division at Thanjavur. This division was formed from 1st December 1981 as per G. O. Ms. No. 1307, Forest and Fisheries, dated 9th November 1981. The establishment of this division consists of a District Forest Officer, and his staff as Thanjavur and the staff attached to different ranges.

(*a*) Establishment of D.F.O.'s Office.—

1.	District Forest Officer	1
2.	Superintendent	1
3.	Statistical Inspector	1
4.	Junior Accountant	1
5.	Accountant	1
6.	Junior Assistants	2+For Range Office—5=7.
7.	Steno-typist	1
8.	Draughtsman, Grade III	1
9.	Tracer	1
10.	Tractor Driver	2 (One Jeep and tractor to be received)
11.	Basic Servants	3
12.	Office watcher	1

182. Social Forestry

(*a*) *Range Officers.*

Serial number.	*Ranges.*	*Junior Accountant.* *Permanent.*	*Junior Accountant.* *Temporary.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)
1.	Thanjavur		1	
2.	Kumbakonam		1	
3.	Orathanadu		1	
4.	Pattukottai		1	
5.	Peravurani		1	
		Total ..	5	

(*b*) *Executive and Productive staff.*—

Serial number.	*Name of the Range.*	*Range Officer* *Permanent.*	*Range Officer* *Temporary.*	*Foresters.* *Permanent.*	*Foresters.* *Temporary.*	*Total.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1.	Thanjavur ..		1	5+1		7	One godown Forester.
2.	Kumbakonam ..		1	5		6	
3.	Orathanadu		1	5		6	
4.	Pattukottai ..		1	5		6	
5.	Peravurani ..		1	5		6	
	Total ..		5	26		31	

Section 2—Labour Supply.

183. There is generally not much difficulties in getting labour for departmental works except during the rainy season and at during agricultural operation, as the important forest operations like ploughing, pitting and planting coincide with the agricultural seasons, due to the attractive wages and foodgrains offered by the agriculturists.

184. The wages paid at present in the division as per Forest Schedule of Rates are given below:

Forest Wages.

		RS.
A Classs	..	8.00
B Class	..	6.00
C Class	..	5.00

Section 3—Miscellaneous.

185. *Adivasis.*—There are about 50 families of Adivasis at Kodikadu and they actually belong to the caste called Ambalakaran Pillai. They eat the fruits of Naval, Fig., Kalakkai, Pala Elandai, Kasan, Palmyrah, etc., found in Kodiakadu R.F. and the other adjoining forests. The boiled seeds of Poonaikachi Kottai is used as food by Adivasis.

CHAPTER V.
PAST SYSTEM OF MANAGEMENT

Section 1—General history of the Forests. Political history of the region.—

186. The Thanjavur country was for more than a thousand years the home of cholas. From the dawn of history down to the end of the 13th Century the Cholas made it the seat of their dominions, the heart of all their activities alike in war and peace.

187. The earliest references to the Chola kings are to be found in the Ashokan inscriptions of 260 B.C. The Mahavasa of Ceylon records the conquest of Ceylon in the middle of the second Century B.C. by a Chola named Elava who is said to have ruled it for nearly a half century. The Chola kingdom was known to the Greek geographers and is mentioned in the periphus Maris Erythali (About 70A.D.) and by ptolemy (140 who states that the capital was then at Uraiyur which is now a part of Tiruchirappalli town. But for the early history of Cholas no source is more precise than the Tamil Sangam literature.

188. Karikala, the most prominent of the Cholas renounced sea Capital (Puhar) Kaveri. pattinam and patronised liberally arts and letters. He aided Ceylon pushed his arms as far as Himalayas, aided for himself, the alliances of the kings Vefra, Magadha and Riandhu and constructed the grand anicut of the Cauvery which formed the foundation of the development of modern irrigation system which is hailed as a Great engineering feat even to-day.

189. From the third century A.D. upto the middle of the nineth century the Kalabhras, Pallavas and Pandiyas over run the Thanjavur and Chola rulers. Chola rulers have been consigned to a position of complete subjection. Then came the swift down fall of the Pandyas as well as the Pallavas. The Cholas were once again mighty race of rulers. Vijalaya (850-870) the founder of the new chola dynasty assisted by his son Aditya I crushed the Pandyas. Aditya I (871-907) subjugated the western Ganges and conqurred the Kongu country and built temples all long the banks of Cauvery from Sahyadri to the sea.

190. Paranthaga I (907-955) was a very powerful ruler and under his leadership the Cholas acquired a dominion which forest showed the greater empires of Maharaja and Kulothunga. With the rise of Rajaraja I (1895-1014) the son of Paranthaya II dawned a new and brillant chapter in the history of the Cholas. He was a great conquerrer, great stateman and efficient administrator. Lord Paragathessewarar temple and at Tanhor built by Rajaraja I stands as a moemth in architecture even to-day. Rajaraja was succeeded by his son Rajendra (1014-1044) who increased the glory of the Chola empire by conquering many Victories over Chalukya Ceylon, Chera and Pandya countries.

191. The Chola throne passed on to a new line, the last Chalukya line, through Kutlottunga (1070-1120) who was more a stateman than a warrrior. The Pandyas and Royasales in the 13th Century monopolished all the powers of the Chola empire. During the middle of the 13th Century the entire Tamil country passed into the hands of the Vijayanagar rulers. During the regions of Viramarasimha and Krishnadevraya South India remained completed loyal to the Vijayanagar empire. Nayak dynasty was formed by Senniappa Nayak was the most celebrated ruler who built various temples; and defeated his rebels.

192. The sun was fast setting during the middle of 17th Century on the Vijayanagar empire Ekoji (1676-1683) founded the Maharashtra dynasty of Thanjavur. Saraboji is the celebrated king of the Maharashtra dynasty who patronised, various arts, sculpture music, etc.,

193. In 1799 Thanjavur was ceded to the British Government with the rise of British power came the end of the last of Indian dynastic of Thanjavur. Form 1799 Thanjavur was under the control of the British till the proclamation of Independance of India in 1947.

194. *Early Forest history.*—The following account of the Forest Conservancy is extracted from the District Gazettee.

195. Prior to 1914, the Reserved Forests of Thanjavur district extended even to Thanjavur and Shiyali taluk but in 1974 the Forests in Thanjavur and Shiyali were disreserved and sold and only Kodia kadu (3995 acres) and Talanayar (3,055 acres) forests of Thiruthuraipoondi taluk were maintained as Reserved Forest. The other reserves are small in extent and consisted of isolated patches of Casuarina and mixed forests. Subsequently Muthupet block was reserved in 1937.

196. *Administrative history.*—The operations of the Forest department were extended to this district in 1971 (until 1971, Tanjore and Tiruchirappalli were two forests divisions, incharge of one and the same District Forest Officer, but with few District establishments. The two were amalgamated in 1911 under the designation. Tiruchi cum Tanjore This division had seven ranges. In 1915 a change in Policy resulted in the small reserves and the rest being transferred to the South Arcot distrct. About the same time the Padugai Forests of the districts were ordered to be handed over to the Public Works Department and one range was abolished. Some reserves were placed under Panchayat managementNumerous changes on similar lines (in the jurisdiction of areas and the ranges) took place from time to time. The later day changes resulting in the present position are indicated below:—

197. In 1941, the Padugai Forests of Cauvery and Coleroon basins were transferred to the District Forest Officer, Salem south from the management of the Public Working Department and the Padugai Range was formed with effect from 1st February 1944.

198. The Reserved Forests of Tanjore district which were transferred to the control of the District Forest Officer, South Arcot District in 1915 remained under his control till 1918 From 1918 they came under the control of the local Revenue Officer. From 1946 a regular ranger was posted incharge of Thiruthuraipoondi Range but the Revenue Divisional Officer continued to be exofficio District Forest Officer till the formation of Tiruchirappalli Forest Division.

199. The Tiruchirappalli ForestDivision was revised on 1st March 1950 taking over Taujore and Padugai Ranges from Salem south Division. Ayyalur Range from Madurai Division and Mannargudi Range of Thanjavur district from Revenue Divisional Officer, Mannargudi.

200. In persuance of G.O. Ms. No. 1416, Revenue, dated 2nd June 1951 issued under the Madras State (Abolition and Conversion into Ryotwari) Act, 1948 the Forest of the following Zamindaris and inams were transferred to the control of the Forest Department on the dates noted against them ;—

Serial number.	*Zamin.*	*Revenue district.*	*Date of transfer.*	*Range included in.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)	(6)
1	Palaivanam ..	Thanjavur	15th October 1951	Mannargudi.	..
2	Nagaram ..	Do.	Do.	Do.	..
3	Gandarvakottai ..	Do.	*Inam.* 25th April 1953	Do.	..
4	Ravuthan vayal ..	Do.			
5	Chatram forests ..	Do.	12th March 1953	Do.	..
6	Do.	Do.	14th March 1953	Do.	..
7	Villanivayal ..	Do.	15th June 1954	Do.	..

201. The Tanjore Forest Division as it existis now was formed on 1st September 1956 with reference to G.O. Ms. No. 1584, Agriculture dated 20th June 1956 with the main object of forming teak plantations along the rivers and canals of the Cauvery system. Prior to that the Forest areas in Tanjore revenue District consisting of mangrove forests, Revenue lands two Ex-zamins Forests and Kodiakadu Reserved Forests were manged under a single Range at Mannargudi attached to the Tiruchirappalli Forest Division which was formed on the 1st March 1950. The Mannargudi Range continued to be under the control of the District Forest Officer, Tiruchirapalli till January 1957 and it was transferred to Tanjore Division from 1st February 1957 when the reorganisation of Divisions, circles was effected.

202. The Tanjore Division when formed in 1956 was attached to the Development circle, Madras. On abolition of the Development circle, it was attached to Madurai Circle from 1st February 1957 to 31st March 1959, from 1st April 1959 the division was attached toCoimbatore circle. Now Tanjore division is attached to Tiruchirappalli circle from 22nd May 1971 as G.O. Ms. No. 1360, Agriculture, dated 23rd April 1971.

203. There was a further development in the Department and the very outlook of the Forestry got modified. In order to meet the growing demand of the industries and factories on a more commercial basis, the Tamil Nadu Forest Plantation corporation was formed as per G.O. Ms. No. 267, Forest and Fisheries Department, dated 3rd April 1974, communicated in Chief Conservator of Forests, Ref. No. 4342/73 J2, dated 29th April 1974, withbroad objections, as narrated below, the social Forestry wing is started with Sweedish Aid as per G.O. Ms. No. 1307, Forest and Fisheries Department, dated 9th November 1981.

204. *Broad objections are.*—(1) Establishing tree plantations in and around villages maintaining and harvesting them and gradual transfer of these responsibilities from the Tamil Nadu Forest Department to the people of the villages concerned.

(2) Improving the economic states of weaker sections in rural society by establishing productive tree crops on their lands which are often unfit for cultivation.

(3) To make available to people of our villages their requirements of Forest product i.e., small timber, firewood bamboos, fodder ,Green manure leaf fruits, oil seeds, etc., from the harvest of poramboke plantations and other sources.

(4) To provide additional opportunities for sustained employment.

Section 2.—Past System of Management and their Results.

205. *General.*—At present the division on consists of different categories of forests namely reserved Forests, reserved lands-ex-zamin forests and areas under the control of the forest department but not yet notified under section 16 of Madras Forest Act, 1882 for reservation. These corests were covered by different working plans at different periods and the division produces mangrove fuel. Casuarina fuel a variety of minor Forest produce, mainly fish and cashew and provides facilities for grazing of the cattle.

206. The Kodiakadu forest was under the control of the Revenue department prior to reservation. Removal of forest produce was allowed for bonafide domestic and agricultural requirements on purchase of permits for Re. 1 each from 1892 from 1907-08 the forest Department issued permits at one Anna per head load and Rs. 14.0 per cart load for the Collection of dry fuel from Kodiakadu reserved forest. In Thalanaiyar forests produce was removed freely prior to reservation. But after reservation (1888) the same rates levied in Kodiakadu forests were followed for the removal of forest produce.

207. Prior to 1911, Chatram department a branch of the District Board was managing the Muthupet Block and removal of dead wood was allowed on permit system. The area came under control of the Revenue Department from 1911-12 and systematic coupe fellings were introduced. The control of the Muthupet Block was again handed over to the Chatram department from 1st July 1923 by a written agreement, according to which the Chatram department was to control the expenses and get half the net revenue as supervision charges. Chatram department claimed large sum as supervision charges, dispropotionate to the revenue obtained and they did not agree to the proposals made by the Collector to reduce the disproprotionate claim on 26th June (1932) the Muthupet forest has taken over by the Revenue Department from the Management of Chatram department. At last Muthupet forest was reserved from 1st May 1937.

208. *Exploitation undre Forest Department.*—In Kodaikkadu reserve for the first time regular fuel coupes were laid out 1907-08 to be worked under coppice with standard system. The same system was followed in Thalainayar reserve and fuel coupes were laid out in 1908-09. In Kodiakadu reserve coupe fellings were discontinued from 108-09 till 1913-14 due to the agitation by the local and lords on the pretext that their valuable tobacco cultivation lying to the north and west of the reserve would be reduced to sandy wastes if felling were continued in the adjoining reserved forest. By 1913-14 the local opposition cooled down, no doubtalloyed by the results of the experimental coppice fellings which so far as Memecylon edule was continued was an unqualified success and coupe felling were resumed.

209. Prior 1935 Kodiakkadu reserve comprises 3,955 acres. In 1935, 25.65 acres were disreserved for the extension for the extension of the railway line from Agasthiampalli to Point Calimere and in 1938, 626.82 acres lying on its eastern and northern boundary were reserved and added to it.

210. *Position as regards working Plans.*—The first working plan for the Thanjavur reserved Forests was prepared by Chengappa in 1918. Chengappa's plan was revised by Said-un-din and the revised prescriptions were brought into force in 1935-36. Said-un-in Ahamed's plan expired in 1944-45 but the forest continued to be treated under the same prescriptions till 1948, when the revision of the plan was taken up by Bhoja shetty. Bhoja Shetti's plan came into effect from 1949-50 K.P.D. Rao compiled the unfied plan for the forests of the Thanjavur Forest division as per Chief Conservator of Forest's C.C.P. Mis. 92/61, dated 31st May 1961 by taking out relevant extracts from the Tiruchirappalli working plan by Thirumalairaj and M. Thyagarajan for planting teak along the river and canal banks. This is the current plan in force from April 1955 to March 1970 which has been approved in C.C.P. Mis. 272/62, dated 5th December 1962. The present plan is for the entire Thanjavur forest Division as constituted from 1st September 1956 and thus revises the unified working Plan K.P.D. Rao.

CHENGAPPA'S WORKING PLAN (1918-1934).

211. In 1918 the first working Plan was prepared by Chengappa for the Thanjavur reserved forests. He prepared two separate plans, one forKodiakadu and other for Thalanayar reserved forest. Copice with standards was the silvicultural system prescribed by him for both the reserves but with difference rotation for each of them. He prescribed a rotation of 30 years for Kodiakadu and 12 years for Thalainayar Forest. He drew up a scheme for Muthupet block on indentical lines to that of Thalanayar to be followed by Chatram department.

212 *Mangrove working circle.*—In 1935-36 said-un-dinincluded the mangrove forests of Thalainayar and Muthupet under the mangrove clearfelling working circle and he prescribed to clearfell the area leaving standards (20 per acre) Avicennia Officinal as seed bearers and the rotation was fixed at 20 years. No formed two separate series for working in Thalainayar and Muthupet reserved forests. The copice with standard system with 12 years rotation prescribed by Chengappa was discontinued. Said-un-din prescribed artificial regeneration of Avicennis officinalis by direct sowing. But this was abandoned after a few trials due to unsatisfactory results achieved Further he prescribed the digging up of channels to incude artificial inundation in areas where the ground level was rising fresh accretions and where Avicennis was showing signs of dying off due to ineffective inundation. This prescription was discontinued after a few attempts due to the prohibitive cost involved and its failure to induce any natural regen ration.

213. Bhoja shetty's Plan which came into force from 1949-50 continued the same prescriptions of the previous plan with regard to silvicultural system, rotation and method of executing feelings. In Thalainayar series coupes I and II were worked in 1950 and 1951 after which no copues were worked. In Muthupet series coupes I and II were worked from 1950 to 1952 and in 1954 coupes IV and V were worked in the same year. The cyclone of November 1952 caused a great deal of damage in the mangrove forests.

214. Bhoja shetty suggested experiments to regenerate the extensive blanks in mangrove forests with suitable species like Acacia arabica and Thespesia populanea but nothing was done in that direction.

215. *Mangrove working Circle.*—Mangrove forests of Thalainayar, Muthupet reserved forests Chatram (Thuraikadu) Forest and the forests at the month of Coleroon near Pudupattinam have been included in this circle. Blanks devoid of any tree growth and areas with scanty growth were excluded from the working circle. A permanent preservation plot of 9.6 acres in Muthupet reserved forests was also excluded. The working circle was divided into five felling series namely Thalainayar, Muthupet, Chatram, Coleroon and Tamarankottai series etc.

216. The silvicultural system prescribed was clearfelling and retaining all advance growth below 6 feet in height in Thalainayar, Coleroon and Tamarankottai series where the practice of retaining 20 seed bearers per acre was discontinued. The coupes were worked on 20 years rotation. It was also prescribed that in Muthupet and Chatram series 20 trees should be retained as seed bearers per acre which are not to be felled. Felling of Alayathi seedling less than 3 inches in girth at base or below 6 feet in height was not allowed. Throwing of brush wood in the creek passing through the coupes or boundary was prohibited to enable the free floating of Avicennia seeds to help natural regeneration. The whole working circle was closed to grazing permanently.

217. During the cyclone of 30th November 1952 accompanied by a tidal wave the whole of Muthupet reserved Forest and Chatram forests were over-run by the sea and remained submerged to a depth of 6 feet or so for a fortnight with the result the great majority of the trees die stompletely. The young growth below 3 years have revived after the recession of salt water—Mangrove coupes in Thalainayar series were worked from 1955 to 1960 (except in 1956) and the eries was closed from 1961 onwards. Coupe II was not sold in 1956 and was worked as arrear coupe in 1957 along with Coupe III. There were 6 coupes in that series. Muthupet and Chatram series were closed from 1959 and 1960 onwards.

218. *Coleroon series.*—Coupe No. I to VIII in Coleroon series were worked from 1957 to 1963 For Coupe No. IX and X in Coleroon series there was no demand in 1964 and 1965 and hence they were not worked. Exploitation in Coupe No.XIII and XIV resumed in 1970 only whichwere due for felling in 1968 and 1969 respectively. Coupe IV to VI Thamarankottai series remained unsold f om 1964 to 1967 and the same coupes were worked as arrear coupes during 1970. So also coupe VII and VII which were due for working in 1967 and 1968 were worked as arrear coupes during 1969 only. The lack of demand for mangrove coupes in previous years was due to the fact that the contractors were not allowed to use the boats through water waysto transport their cut materials fearing that they will smuggle contraband goods. But fram 1969 onwards they were permitted to use the lagoons etc., to transport their material with the results the mangrove coupes were sold easily. The details of coupes worked in each series and the amount realied etc., are furnished in.

219. There has been a sustained demand for mangrove fuel in these parts. Copice regeneration is generally satisfactory. The prescribed rotation appears to be quite adequate. Though the Mangrove areas are closed to grazing permanently the presence of the 'Semi wild cattle' is still a menace to the regeneration. Since they avidly east away the Alayathi seedlings thus preventing the establishment of the same.

220. *Simple coppice working circle.*—Said-un-din proposed one series in Kodiakadu reserved forest. He prescribed silvicultural system of simple coppice with reservation of healthy trees yielding minor forest produce such as Tamarind, Soapnut, Konnai with a rotation of 30 years.

221. In 1938, there was agitation from the local agriculturist against fellings in the reserve on the pretext that these lands would be reduced to sandy wastes if fellings were allowed in the adjoining reserved forests. Further there was keen demand for dry leaves in the reserved forests as manure for tobacco cultivation. The problem of regeneration of Manikara, hexandra remained unsolved. Hence for all these reasons Government in G.O. Ms. No. 2383, Development, dated 24th September 1936 ordered that fellings of fuel coupes in Kodiakadu Reserved Forest should be stopped and the sale of dry leaves was allowed.

222. Bhoja Shetty included the Kodiakadu Reserved Forests under the dry every green working circle and the prescribed no fellings in Kodiakadu forests as they are set apart for the supply of manure leaves for the local tobacco cultivation. In addition they serve as a protective belt to preventing drifting of sand from the coast to the cultivated field.

223. He divided the Kodiakadu forests including the adjoining village forests into three blocks and prescribed a rotation of 3 years for the removal of dry leaves under the cover of permits issued departmentally at a cost of one anna per chit. Removals were permitted only on head loads. Lopping was prohibited dry leaves were removed in one block once in three years, and the block was allowed to rest for the remaining two years. The right of removal of dry leaves was sold in Public auction in 1952-1953 as an experimental measures which fetched at revenue of Rs. 2,589. This method was continued since then.

224. K. P.D. Rao's plan prescribed the selling of dead wood in Kodiakadu reserved forests on a three years cycle which was deleted as per Chief Conservator of Forests Rt. 1200/65, dated 8th June 1965 due to lack of demand for the same.

225. None of the mangrove series had a complete set of coupe to go round the working plan period of 15 years. Muthupet and Chatram series had three coupes each already worked by 1958. Thalanayai had six coupes, all of them have already been worked. Coleroon was having 14 coupes.

226. Thamarakottai series was formed in Thamarakottai, Maravakadu Chatram forests during 1959-60 as per Chief Conservator's Rt. 1489/60, dated 12th September 1960 to supply fuel to Muthupet and Thamarankottai villages. Bits I and II of coupe I were sold for working in 1960—61.

Coupe—I, Bit I—28.8 ha. Rs. 4,500.

Coupe-II, Bit II—30.4 ha. Rs. 2,551.

227. There was considerable damage from the cattle to the young crop in felled copupes.

228. With the opening of several brick kilns round about Muthupet and Pattukottai, Thillai wood for which there was no demand previously was also consumed in the kilns. Hence the fuel coupes were getting a reasonable price. The margin of $1\frac{1}{2}$ chains along the creeks in Muthupet and Chatram series were not been left along all the breeks as prescribed in the working plan.

229. *Protection working Circle.*—Said-ud-din included the areas with ferior type of growth an area adjoining Agasthiampally salt factory and cultivation lands in Kodiakadu Reserved Forests under this working circle. Large blanks of Muthupet reserved forest also formed part of this working circle. Fellings from these areas were to be prohibited except fellings for departmental work or for free grants. The northern and western portion of Kodiakadu reserved forest through good growth was excluded from Coppice working circle and included in the protection working circle as a wind belt to protect the Vedharanyam salt factory, and adjoining cultivated lands from sand drift. But actually from 1939 onwards the whole of Kodiakadu reserved forest was included under protection working circle as per G.O. Ms. No. 2383, Development, dated 24th September 1938.

230. K. P. D. Rao's plan prescribed the selling of dead wood in Kodiakadu Reserved Forest on a three year cycle, which was deleted as per Chief Conservator of Forests's order R/1200/65, dated 8th June 1965 due to lack of demand for the same.

231. *Grazing working Circles*.—Grazing was prohibited in the felled coupe areas for 5 years including the year of felling in Muthupet, Talanayar and Kodiakadu Reserved Forests. Grazing was allowed in other areas. The grazing fees levied were not uniform. It varied from Reserved Forests to Reserved Forests, and Reserved lands as follows; during said-ud-din's plan.

GRAZING RATES.

Serial number. (1)	*Description.* (2)	*Kodiakadu* (3)	*Talanayar.* (4)	*Muthupet.* (5)	*Remarks.* (6)
		RS. A. P.	RS. A. P.	RS. A. P.	
1	Buffaloe	0 4 0	1 0 0	0 8 0	..
2	Cow	0 4 0	0 0 0	0 4 0	..
3	Sheep	0 2 0	No demand	No demand.	..
4	Ponies	0 4 0	Do.	Do.	..

232. In the guise of the semi wild cattle, village cattle were let loose in side Kodiakadu Reserved Forest and hence it was a challenge for the department people to achive the full target in grazing revenue. Semi wild cattle are owned by the local villagers and allowed to graze in side the foersts without permit and whenever they want them, they capture the cattle which are distinguished by blended marks.

233. *Bhoja Shetty's plan*.—There was no change in this plan and the same practice was continued.

234. *K. P. D. Rao's plan*.—No separate working circle was drawn by K.P.D. Rao grazing was prescribed under Miscell neous regulations. In his prescription was regulated by isuse of permits. All the mangraove forests and cashew regeneration areas were permanently closed for grazing.Casuarina plantations were closed for a period of three years including the year of planting for grazing

235. The grazing rates were revised with effect from 1st July 1971, as follows:—

Sheep Re. 0.50, Cow, Bull, Horse, etc., Rs. 100. Buffaloe Rs. 2.00 per head.

Cuttering and removal of fodder grass by headloads were also allowed.

236. *Minor Forest Produce working Circle Said-ud-din's plan*:—Each Reserve was treated as a separate unit and all items except species of Suaeda were sold together. Suaeda was sold separately since there was a keen demand for this species as a mordant. Avaram and manure leaves were prohibited from sale. But avaram was leased out as a separate item since 1945-46. The Government in their G.O. Ms. No. 2383, Development, dated 24th September 1938 has permitted the removal of dry leaves from Kodiakadu Reserved Forrests atthe rate of two annas per head load which was subsequently reduced to one anna.

237. Free fishing in the lagoon of Muthupet reserved forest was not recognised at the time of reservation. But subsequently on representation the same previlege was conceded in the lagoon in Muthupet Reserved Forest under section 18 of the Madras Forest Act of 1882 as per Chief Conservator's Proceedings Miscellaneous No. 136, dated 28th April 1943. Till 1943, the right of fishing in pits and puddies' of Muthupet reserved forest was sold in public auction annually, but from July 1944, the same was given to one A.M. Mohammed Sheik Davood for three years on agreed payment to the Department.

238. The Government in G.O. Ms. No. 372, Development dated 9th March 1935 directed that the rentals from the fisheries in the sections of the Cuavery system passing through the Muthupet and Thalanayar reserved forests be credited to the Fisheries Department.

239. The Tahsildar, Thiruthuraipoondi sold the right for fishing in Thalanayar Reserved Forest in public auction annually along with rights for fishing in creeks and streams in the unreserves and the Revenue realised was credited to the Fisheries Department.

240. The Range Officer, Thiruthuraipoondi sold the right of fishing in Kodiakadu reserved Forests and the Revenue realised was credited to the fisheries department.

241. *Bhoja's Shetty's Plan.*—Each reserved forest formed one unit for the exploitation of general minor Forest produce. No changes were made in the prescriptions for the method of fishing. In Thalanayar the right of fishing was sold in auction annually by the Revenue department along with the rights for fishing in creeks and streams in the unreserves. In Muthupet, the right of fishing in pits and Puddles was sold by negotiation to the Parvatha Rajakula Fisheries Co-operative Society since 1951-1952 as per Chief Conservator's (CCP Mis. No. 307 of 1951, dated 7th July 1951) fishing in the lagoon is free. In both the cases the revenue was credited to the Fisheries department.

242. But in Kodiakadu Reserved Forest the right fishing was sold along with other minor Forest Produce and the Revenue credited to the Forest department.

243. The right of collection of Konnaibark from the reserved of Mannargudi Range (now Pattukkottai range) was sold in auction once in three years, the entire range forming one Unit (*Vide* Chief Conservator's Mis. No. 482/50, dated 31st November 1950).

244. The right of collection of Avaram bark from Kodaikadu forest was sold separately as one unit.

245. *Zamin and Inam Forests*—All forests falling under this category were hacked and exploited recklessly from the movement the Madras estate (Abolition and conversion into ryotwari) Act 1948 was framed by the Government. Everywhere encroachments were common. Chatram (Mangrove forests) is the only forest in the area that escaped the damage. Many of the Zamin and Inam forests are small in extent and very much scattered. At no time they were managed scientifically. A brief account of the treatment noted out to these forests prior to the date of taking over is furnished below :—

246. The Chatrams forests of Thanajavur district were managed by the Chatram departmen a branch of the District Board and the revenue realised was spent tomaintain the numerous chatrams and rest houses built by the late Raja of Thanjavur, for the convenience of Pilgrims going to Rameswaram.

247. Though the area is extensive the effective wooded area is less. This mangrove forest was worked in the same manner as the adjoining Muthupet reserved forest which was also managed by the Chatram department up to 1,911.12 and 1923—1932. Removal of deadwood was allowed on permit system in the distant past. However regular exploitation by annual coupe system on a 20 years rotation was introduced by about 1920 and one rotation has been completed. During the cyclone of November 1952 this area was also very badly affected resulting in large scale damage to the stand.

248. The right to fish in the streams, pits and puddles was leased out annually, some times on a 5 years lease and this formed a major source of revenue which was Rs. 5,750 at the time taking over.

249. Grazing was allowed under Cover of permits at four annas per cow and eight annas per buffloe.

250. *Casuarina plantation working circle.*—There was no separate working circle for Casuarina in the previous plans. Only K.P.D. Rao constituted a separate working circle for Casuarina in his plan.

251. Casuarina plantations were commenced from 1946 at Alakkudi as wind belt. The coastal sandy tracks were planted initially. Later on i.e. was extended to Paudugais and inland tracts.

252. The silvicultural system adopted was clear felling with concentrated artificial regeneration of casuarina equisetfolia transplants and a rotation of 7 years was prescribed. Casuarina was raised as pure crop. The technique adopted was clearfeling the existing growth about 2 feet in height with full root system in pits of 1 foot by 1 foot by 1 foot size at an espacement of $8\frac{1}{2}\times8\frac{1}{2}$ during July. Planting of 2 seedlings 6 inches apart, in each pit wasprescribed, the less promising of the two to be cut at he end of the monsoon. Wells had to be dug at the rate of one for every two acres. It was replacement of casualities was also prescribed during the first year, as and when

they occur one soil working during September and second soil working and mulching during December-January fencing by prospis raised by repeated sowing, two years in advance of plan ing clousre of plantations against grazing during the three years including the year for forma ion, etc.

253. The watering regime suggested by K.P.D. Rao in his plan was as follows :—

(*a*) Half a pot of water per plant per day for the first 30 days.

(*b*) One-third pot of water per plant once in two days till 31st December except on rainy days.

(*c*) Watering the backward plants at the rate of 1/3 pot of water per plant on a alternate days till the end of March.

254. During 1960–61 miscellaneous growth at Maharajapuram, Alakkudi and Sodjakudi was felled over 44.41 hectares for raising Casurina plantations. So far upto 1970, 360.27 hectares were covered with Casuarina in Thanjavur Division.

255. The scatered nature of the areas suitable for Casuarina planting coupes led with irregular nature of planting programme followed in the past poses some difficulty with formation of series with qual areas of annual planting.

256. The Casuarina plantations raised in Kodiakadu reserved Forest over 40 hectares during 1954 was a failure and hence raising Casuarina at Kodiakadu Reserved Forest was discontinued. The spacing and rota ion prescribed by K.P.D. Rao appears to be quite adequate. The growth in the second and subsequent rotation crops appear to be poorer which maybe due to the depletion of fertility of the soil.

This is a problem which needs further investivation.

257. *Cashew plantation working circle.*—As per K.P.D. Rao's suggestions cashew was raised over 448 hectares from 1955–69. As the performance of the plantations were far from satisfactory, cashew planting was discontinued in Kodiakadu but raised under plan schemes from 1964 in the upland tracts of ex-zamin forses of Merpanaikadu, Keeramanagalam, Komarapuram, Senthangudi, Neppugai and Avanam (Except Avanam Reserved Forest). The other areas are not in this division new).

258. 1967 Senthangudi 1969 Komarapuram and 1969 Avanam, Cashew plantations were raised effectively under Kumri cultivation.

259. As against Working Plan prescription of planting container seedlings in pits of size 1' × 1' × 1' cashew nuts were dibbled in 1½ cube pits at the rate of 2 nuts per pit and the result were found to be satisfactory.

260. The right of collection of cashew usufructs were initially sold to the contractors, and as there was no demand, departmental collection were restored from 1967–68.

261. *Manure leaf working circle.*—In K.P.D. Rao's working plan an area of 1,422.45 hectares was divided into three felling series in Kodiakadu reserved fore st for the removal of manure leaf for tobacco cultivation at the rate of one coupe per year. Though the right to remove dry leaves were sold in auction and the removal controlled by issue of permits. Since 1952–53, it was discontinued from 1964–65 as it was not a sound a silvicultural practice and for want of demands

262. *Removal of deadwood.*—Though the removal of deadwood from the Kodiakadu Reserve Forests was in vogue from 1960–61 contractors. The prescriptions laid down by K.P.D. Rao's was deleted as per Chief Conservator of Forest's R. No. 1200/65, dated 8th June 1965.

263. *Minor Forest Produce working circle.*—All items of minor forest produce occuring in the whole of Thanjavur Revenue district and certain items in unreserves except fishing and cashew usufructs are leased out annually in open auction to the contractors. Economically important minor forest produce like Avanam bark, Elandai, Cowdung Palmyrah and coconut leaves were sold separately, the reserved forest being the lease unit.

264. The exploitation was mostly seasonal through the agency of contractors with the lease period of one year generally commencing from April.

265. Cane is found in small quantities in Gopala samudram reserved land but in sufficient quantities for commercial exploitation.

266. The Maharajapuram block which is only 4 acres in extent has been providing the revenue entirely from the yield of Zizyphus fruits.

267. The right for the collection of Palmyrah usufrcts from about 3,500 trees in Manalmelkudi was offered for sale as a separate unit in 1969–70 for the fitst time for an amount of Rs. 250 The reason attributed for the poor price is the non-availablity of tappers in the area and presence of several thousands of Palmyrah trees in the vicinity under the control of the Revenue department which also leases out the right of collection of usufructs.

268. *Fishing leases.*—Fishing in Thalanayar reserved forest and adjoining unreserves is leased out by the Revenue department annually.

269. The right of fishing in the pits and puddles of Chatram forest (Thottam area) and Muthupet reserved forest is given on negotiation to the Fishermen's Co-operative society at a rental based on the average of the auction amounts of 1961 and 1962 as per G.O. Ms. No. 304, Food and Agriculture, dated 31st January 1961. As the societies did not agree to the lease amount fixed the units were sold auction during the year 1963–64 and 1964–65 During 1965–66 the units were leased out to the societies at negotiated rates in consultation with the Assistant Director of Fisheries. From 1966-67 onwards the units are allotted to the Societies based on G.O. Ms. No. 365, Food and Agriculture, dated 6th March 1965.

270. Fishing is free in the lagoons of Muthupet reserved Forests

271. In Kodiakadu reserved forests the right of fishing was sold by the District Forest Officer along with their minor forest produce.

272. The right to fish in the tanks and streams of Manamelkudi Chatram forests was sold by the District Forest Officer.

273. The current plan prescribed the selling of Konnai bark as a separate unit, if there is sufficient quantity on a 5 years cycle.

274. Avaram bark was exploited annually. During the past few years there is a decline in the demand.

275. *Plantation working circle.*—The scheme for raising teak and other timber species along the margins or rivers, canals and lakes in the State was sanctioned in G.O. Ms. No. 1574, Food and Agriculture, dated 20th June 1956 as a part of the enlarged development works of the Forests Department and was included in the second Five-Year Plan. To investigate and implement the scheme a special Forest Division with Headquarters at Thanjavur was formed 1st September 1956. Five Range Officers and one Distlict Forest Officer with necessary executive and ministerial staff were posted for the work. All the lands at the disposal of Government along the fringes of rivers and canals were investigated in detail.

276. The investigation during 1956-57 revealed that an area of about 1,103 hactare of compact blocks and 752 km. along the river and canal margins were suitable for raising teak. The areas are mostly along the banks of the Vennar, Vadavar, VettarCauvery and Coleroon in Thanjavur and Tiruchirappalli districts and Thambaraparani in Tirunelveli district.

Small pereninal river Vellar of South Arcot district is also included . The areas in Salem revenue district have been excluded as they are small in extent and very much scattered.

277. No suitable areas were found to exist along the Vaigai in Madurai district the Palar and Pennar in the North Arcot and South Arcot districts.

278. The original schemes for planting teak and other timber species on river and canal banks was drawn up by M. Thyagarajan and this scheme is followed with suitable modifictions wherever necessary.

The total area selected for planting is 4,800 hectares with an annual target of 320 hectares.

The scheme was drawn up for a period of 15 years from 1956-57 to 1971-72.

279. Teak is the principal species prescribed for planting. For areas unsuitable to teak, other species like Terminalia arjuna, Terminalia tomentosa Dalberzia sisso- etc., were, prescribed.

280. The espacement prescribed were 12 feets for compact areas and 16½ feet for avenues Watering is prescribed at the rate of one galloon per plant daily for the first fortnight after planting when there is not enough moisture on the ground,and there after at the rate of one gallon on water per plant, on alternate days, until the outbreak of south west mansoon the next year, except during rainy season.

281. Rotation of 60 years is fixed provisionally.

282. Planting under this scheme commenced in the year 1956 when 93 hactare were planted. Since then planting has been continued annually and till 1970 a total area of 5,295 hactare has been planted. At present the annual target for planting is 500 hactare.

283. Teak stumps were planted at wider espacement and watered for the first five years.

284. The results of plating are generally ver successfully and the scheme as a whole has created a rich timber potential for the State.

285. The avenue plantations are handed over to the public working Department for further maintenance at the end of three years. The compact plantations are retained with the Forest Department. No further suitable areas were available for compact plantations.

286. All the avenue plantations upto 1965 except the following have been handed over to the Public Works Department.

II, Range—

Arasalar Puthar—9.5 Kms.

IV. Range—

Ayyavaiyanar—11.2 Kms.

287. The avenue and compact plantations raised upto 1958-59 in Tambaraparani region have been handed over to the District Forest Officer, Thirunelveli south on 16th July 1959 on the closure of that unit at Palayamkottai for further maintenance.

288. The following compact plantations raised in No. III Range between Nayyal and Thiruchirappalli have been handed over to the District Forest Officer, Tiruchirappalli for further maintenance and protection as these blocks are either contigeous or close to the forest blocks of Padugai range.

289. Seven blocks of compact plantations of 29.4 hacare from II Range of Thanjavur division were haded over to Padugai range on 1st June 1965. In these plantations teak was raised initially and blanks were beaten up with sissoo and other miscellaneous species.

290. *Miscellaneous prescriptions.*—K. P. D. Rao's plan prescribed complete closure of Mangrove forests and cashew regeneration areas for grazing and cashew regneration areas for grazing. The Casuarina plantation areas were closed for three years including the year of planting for grazing. Grazing in other areas were regulated by the issue of permits under the revised uniform from rates 1.7.71 Removal of fodder grass by head loads werealso permitted.

291. *Boundary lines.*—K. P.D. Rao's plan prescribed the preparation of maps and renotification of boundaries obviating all the discrepancies existed. But it seems that nothing was done in that line. Stone pillars have been erected in all the Reserved Forests except Thuraikadu, but they have not been numbered in accordance with settlement maps except Talanayar Reserved Forests.

292. *Reservation proceedings.*—There were 18 blocks to be notified under section 16 of Tamil Nadu Forest Act 1882. Out of the 166 blocks 35 blocks have been notified under section 26 of Tamil Nadu Forest Act 1882. 9 Blocks whch were not worth notifying may be handed over to the Public Works Department.

293. *Jurisdictional charges.*–Pudupattinam beat which was severed from old Mannargudi Range, and attachedto the No. IV Sirkali Rnge was proposed to be handed over to Chengalpattu Division. Similarly the Casuarina planatation incoleroon Padugai viz., Mudalaimadagu, Alakkudi Sodiakudi and Gopalasamudram were proposed to hand over to Udayarpalayam Range, but they were taken from Old Mannargudi Range to No. IV Sirkali Range for better and efficient management. The suggestion or distributing all the areas of Mannargudi Range to other adjoining areas and abolishing the same was not implemented.

294. *Wildlife.*—In G.O. No. 1821, Agriculture, dated 13th June 1967, the Government notified an areea of 1728.73 ha of Kodiakadu Reserved Forests and its extension as Point Calimere Wild Life Sanctuary. The Government in this order No. 2871, Agriculture, dated 5th October 1967, approved the proposals of the Chief Conservator of Forests for the acquisition of six patta lands extending over 9.10 ha which were within the sanctuary limits. The acquisition was done as per Award No. 6/69, dated 18th December 1969 of Revenue Divisional Officer, Mannargudi.

295. The provisions of the Wild Life Birds and animals protection Act 1912 was introduced in Thiruthuraipoondi and Nagapattinam Taluk as per G.O. No. 1870, Food and Agriculture, dated 22nd May 1962 communicated in Chief Conservator of Forests Ref. No. 55846/61 E1, dated 9th August 1962.

296. *Manamelgudi Forests.*—As against K.P.D. Rao's prescriptions of 40 ha Coconut planting at 22×22 feet espacement, 48 ha at 16 ha per annum have been plantted from 1963-64 to 1965-66. Due to poor maintenance and negligence the coconut stand has become poor.

SECTION 3—*Special works—Improvements undertaken.*

297. The details of special works of improvements carried out in different forests are as follows:-

298. *Kodiakadu Reserved Forests*—Said-un-din-plan with the good aim of checking the intrusions of tidal waves suggested construction of bunds across creeks in Kodikadu Reserved Forests so that it was expected that the vegetation wood establish itself in the grassy swamps. The idea was given up a the bunds were washed away in no time.

299. Casuarina plantation over 160 ha were raised during 1942-1946 as the results were discouraging, the practice was discontinued. In order to improve the grass lands thespesia populuea cuttings were planted during 1931-1935. Only a few of them which were out of reach of sea water alone survied. The same working plan prescribed artificial regeneration of *Avicunia officinalis* which proved a failure.

300. *Artificiai regeneration of degraded dry fuel forests.*—The necessity of large scale artificial regeneration of ex-panchayat degraded, dry fuel forests were felt and the Government sanctioned the same in G.O. Ms. No. 2556, Development, dated 31st July 1953 (communicated in Chief Conservator of Forest's No. 4646/52, dated 1st June 1953). The attempt to regenerate with Misc. species over 106 acres was failure during 1953 in Keeramangalam Reserve. But the invigorated timely attempt during 1954, in raising 269 acres of Keeramangalam Reserved Forests of Ex-zamin Forest was a success.

301. *Bamboo*—During 1954, 300 Bamboo rhizomces were planted in Mudalaimadagu, 1954 Casuarina planatation was a failure.

302. *Soft wood plantation*—Ailanthes excelsa and Salam aliamalabarica raised over 29 Ac. in Keeramanagalam Ex-zamin Forests were a failure.

303. *Glass plot*—Attempts were made to raise conchrus ciliaris Kolukattai Pallu, a fodder grass one acre each in Kodiakadu and Muthupet Reserved Forests met with failure.

304. *Green manure seed farm.*—The moist areas of the plantations that were though suitable for inter cultivation of Sesbania species, were prescribed for raising manure seeds. Due to poor results they were discontinued.

305. *Research—Permanent preservation plot in Muthupet.*—An area of 9.6 acres was set apart as permanent preservation plot in Muthupet Mangrove forest as per the recommendations of the Third silvicultural conference held at Dehra Dun in 1929.

306. The permanent preservation plot had to be abandoned as the mangrove species died as a result of the cyclone on 30th November 1952.

307. Details of special works of improvement under taken during the K.P.D. Rao's plan period are furnished below :—

Casuarina plantation.—Eeven though pruning was not prescribed in the unified working plan of K.P.D. Rao in the amendment to para 160 issued in the Chief Conservator of Forest's K.Dis 5679/69 D1, dated 2nd February 1969 Conservator of Forests, Tiruchi circle No. 6493/69 T, thinning the persistent lower branch was carried out in plantations which were more than 3 years during 1969-70.

308. *Cashew plantation.*—As per G.O. Ms. No. 1702, Agriculture, dated 3rd June 1969, communicated in Chief Conservator of Forests No. 66189/68 T1, dated 30th June 1969, the following cultural operations were carried out in older cashew plantation resulting in increased productivity.—

(1) All rank growth of Misc. thorns and bushes in between cashew plants was cleared and uprooted.

(2) Intensive soil working around cashew plants to a width of 3 m by manmtatees.

(3) Deep ploughing of the interspaces by tractors.

(4) Soil conservation measures like contour bunding construction of waste weires.

(5) Plant protection measures such as spraying D.D.T. 5 per cent and sulmite a funficide.

(6) Application of chemical fertilisers at 1Kg. per plant around each plant in the trenches dug out during 1969–70.

309. *Teak plantations.*—In the Teak avenue plantations cultural operations such as thinning wherever necessary, climbercutting and pruning lateral branches upto half the height of the tree were carried out. Governmert in G. O. Ms. No. 1168, Agriculture, dated 3rd April 1968 sanctioned one Assistant Conservator of Forests and Peon for this work for a period of one year. Teak avenue plantations yielded a fair amount of revenue to the department.

RESEARCH.

310. *Stump planting of Cashew.*—Stump planting was done over one acre in Ettiathalai Forest in Thiruthairaipoondi Range during 1964. As per Chief Conservator of Forest's Ref. No. 2295/61, dated 28th December 1961. The experiment was abandoned due to failure.

311. *Eucalyptus hybrid (Mysore gum)*—Eucalyptus hybrid was raised over 0.8 ha at Pudupattinam as on experimental measure during 1962-63. The attempt was given up due to failure.

312. Experiments were conducted on the introduction of some dix exotic species on the banks of Vennar and Vettar out of which only Eucalyptus hybrid was found coming up well.

313. *Dalbergia sissoo.*—Experiments have shown that Dalbergia sissoo grows luzuriantly along the river banks and canals where good alluvival soil with high water table occurs.

314. *Morus alba.*—The trials conducted proved that this species is not a choice for this tract.

315. *Inga dulai.*—Experiments have shown that Inga dulca should be raised by planting naked transplants Under irrigated condition the survival and growth are remarkable.

316. Species like Ailanthes excelsa, Ailanthus malabarica Salmalia malabarica Albizzia galcata Albizzia stipulata swientenca macrophylla Cassia javanica, etc., were tried at Tanjore but they failed to come up.

317. *Canes.*—Four species of canes were tried at Tanjore but due to heavy browxing the trial ended in failure.

318. *Fodder Grass.*—Fodder species such as Cenchrus Cifiaria (Koli kattai grass) Ceuchrus glaucus (Glue buffel) Panicum maximum (Guinea Grass) Panicum antiadot lobe (Thin Napier grass) Penniset tum pur pereum were tried. Only panicum autidotale succeeded under irrigated condition.

319. *District Experiment.*—During 1958 one acre of blank mangrove forest of Muthupet Reserved Forest was selected. Lines were cleared and babul seeds were dibbled in the lines. The seeds germinated profusely, but died during the succeeding summer. No further trias were under taken.

320. *Wildlife.*—Thiru M. Krishna the well own Naturalist and the recipient of Jawaharlal Nehru Scholarship undertook the faunel survey of 'Point Calimere Wild Life Sanctuary'

321. The Bombay Natural History Society under a grant from the Smithsoniam Institute, Washington has undertaken 'Bird bending ' from 1968 February onwards.

322. *Farm Forest.*—Farm Forestry Scheme was introduced in Tanjore District in the yeas 1966, within the limit of Tanjore district, 330 ha have been covered upto 1967 under variours Panchayat Unions. A Range Officer was stationed at Aranthangi with five forests under him to assist.

323. *M. S. Karunakaran's working planl*—M.S. Karunakaran's working plan (Current plan 1971-1981) constituted the following working circles.—

(1) Timber plantation working circle.

(2) Cashew working circle

(3) Casuarina working circle.

(4) Mangrove working circle.

(5) Minor Forest Produce working circle.

(6) Miscellaneous working circle.

324. *Timber plantation working circle.*—Total area of the timber plantation working circle was 12,124 ha of which 5395.17 ha. were already planted and 6829.26 ha. were proposed for future planting in the current plan.

325. *Planting series.*—The timber plantation working circle has been divided into seven planting series as follows:—

Serial number and name of the series.	*Areas planted upto 1982.*			*Total area. ha.*
	Avenue ha.	*Compact ha.*	*Blocks.*	
(1)	(2)	(3)	(4)	(5)
1 Thanjavur series	3,155.44	57.49	..	3,212.93
2 Kumbakonam series	3,070.63	50.18	..	3,120.00
3 Tiruchirappalli series	1,496.93	25.67	..	1,522.60
4 Sirkali series	2,994.92	..	..	2,794.92
5 Mannargudi series	3,095.91	..	..	3,095.91
6 Pattukkottai series	697.00	...	..	697.00
7 Chidambaram series	792.00	..	..	792.00
Total ..	15,102.83	133.34	..	15,236.17

326. Consequent on the formation of new Forest Divisions and readjustment in the jurisdiction of the divisions the Tiruchirappalli planting series and Chidambaram planting series have to be deleted from Tanjore division and plantations raised in these series have to be handed over to the Tiruchirappalli Division and Cuddalore Division.

327. The list of plantations raised in Tanjore Division and to be handed over to the Tiruchirappalli Division as per Chief Conservator of Forest's D.Dis. T1/69186/81-2 dated 18th May 1982 is as follows :

(*a*) *List of plantations to be handed over to Tiruchirappalli Division.*

Serial number and name of plantation.	*LB or RB.*	*Length.*		*Area in*	*Remarks.*
		From.	*To.*	HA.	
(1)	(2)	(3)	(4)	(5)	(6)
1 1956 Cauvery	RB	27/0	to 29/1	10.11	..
2 1957 Do.	RB	22/7	to 36/0	63.73	..
3 1958 Coleroon	RB	15/2	to 21/1	28.53	..
4 1959 Cauvery coleroon	LB	9/2	to 14/5	27.31	..
5 1959 Do	LB	9/3	to 17/0	37.02	...
	LB	9/3	to 17/0	79.11	..

Serial number and name of plantations.	LB or RB	Length From	To.	Area in HA.	Remarks.
(1)	(2)	(3)	(4)	(5)	(6)
6 1960 New Kattalai Highlevel channel	Common	19/6	to 39/6	92.27	..
7 1961 Do. ..	RB	24/5 24/5	to 39/5 to 38/0	97.12	..
8 1962 Do. ..	RB Common LB	24/5 17/6 17/3	to 24/6 to 39/5 to 24/1	66.37	..
9 1963 Do. ..	Common RB	16/6 16/6 16/6	to 17/3 to 17/3 to 17/6	64.76	..
10 1964 Do. ..	RB LB	2/1 2/1	to 17/3 to 17/3	99.12	..
11 1965 Cauvery	RB	7/4	to 11/2	30.76	..
12 1966 Do. ..	LB	8/5	to 14/7	80.94	..
13 1967 Do. ..	LB	24/0	to 25/2	48.56	..
14 1970 Uyyakondan channel	LB	3/0	9/6	50.00	..
15 1972 Do. ..				20.00	
16 1976 Coleroon	LB			10.00	..
17 1978 Pullambadi	..	44/2	to 46/5	42.00	..
18 1979 Do. ..	..	46/5	to 52/0	24.00	..

List of plantations to be handed over to Cuddalore Division as per Chief Conservator of Forest's D. Dis. T1/79186/81-2, dated 18th May 1982.

The following plantations to be handed over to Cuddalore Division.—

Serial number, year and Name of the plantation.	Area in ha.	Localtion.	Remarks.
(1)	(2)	(3)	(4)
1 1978 North Rajan	120	Left side	..
2 1978 Khansahiv voikal	50	Right bank	..
3 1978 Ariyakosty	60	Do.	..
4 1979 North Rajan	60	Do.	..
5 1980 Vadavaru	120	0/0 to 7/4	..
6 1981 Sengal odai	20	Both sides	..
7 1981 Vadavaru	72	0/0—0/7 7/0—to 13/5	..
8 1981 Muruathu voikkal	120	Right bank and left bank	..
9 1981 Ariya gosti	50	Do.	..

(c) ROAD AVENUE PLANTATION RAISED IN CHIDAMBARAM RANGE, THANJAVUR FOREST DIVISION DURING 1971—1982 TO BE HANDED OVER TO THE CUDDALORE DIVISION.

Serial number	*Year of Plantation.*	*Name of the plantation.*	*Area in Km. or number of plants.*	*Name of species.*	*Percentage of plantation.*	*Distant plantation*	*Location of*	*Remarks*
1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
					PER CENT.			
1	1978	Chidambaram to Kollidam	5 Kms (440)	Delenix rejiz	85	Right bank.	Left side.	..
2	1979	Chidambaram to Bhuvanagiri	1000/5 Km.	Do.	5	Right side.	Do.	Failure
3	1980	Bhuvanagiri to Kurinchipadi	1000/10 Km.	Do.	35	Do.	Do.	..
4	1981	Lower anicut to Kattumannarkudi RAP	1000/5 Km.	Do.	40.	Do.	Do.	..
5	1981	Lower anicut Vadavar softwood	20 ha.	Bambax Malabaricum.	5	Right side of Vadavar.	Do.	..

3. List of Plantation to be handed over to Pudukottai Social Forestry Division.

1	1980	Ayyankulam	25 ..	..	..	..	..	..
	1981	Avanam to Keeramangalam road avenue	5 Km.	..	..	..	..	..

329. *Rotation.*—The tentative rotation adopted in the previous plan is 60 years. The age gradations available at present are got about 25 years. Since most of the growth both in canal bank plantaions and compact blocks are seporadic due to large gaps created by 1977 cyclone, the data obtained from the plantations would not give a correct indication of the increment trend for the entire rotation. However the growth rate of the principal species could not be compared with those generally observed in its natural home. viz., moist decidous habitate.

330. *Thinning.*—Three thinnings have been prescribed at the age of 9th, 18th and 30th years. But no thinning has been done.

331. *Cyclone.*—There was an unfortunate devastating cyclone on 12th November 1977 which hit the eastecrn oast near Nagapattinam and crossed the coast westward. The speedy cyclonic wind and the spate in all the canals and rivers caused heavy damage to the plantations and a very large number of teak plants were uprooted and thrown away and are equal number of plants broken at varying heights from the ground. The trees uprooted were collected and brought to stock. the details are furnished below :—.

332. Details of trees damaged in Cyclone and Trees taken over from P.W.D. Thanjavur Range.

Serial number.	*Name of plantation.*	*Number of trees damaged.*	*Number of trees taken over from P.W.D.*	*Number of trees salvaged.*	*Balance trees to be salvaged.*
(1)	(2)	(3)	(4)	(5)	(6)
1	1961 Solasundaramaniar ..	674	674	674	..
2	1962 Solasundamaniar	1,911	1,911	1,911	..
3	1963 Solasundamaniar	1,482	1,482	1,482	..
4	1962–63 Pandavaiyar	6,972	6,972	6,972	..
5	1961–67 Odamalaiyur	4,068	4,068	4,4 0	2,518
6	1971–72–73 Velliyar	6,968	..	4,450	..
7	1964-Velliyar T.A.P.	2,431	2,431	2,431	..
8	1964–69 Velappar	6,729	6,729	6,729	..
9	Vadavar	243	243	243	..
10	G.A. Canal	561	545	545	..
11	Vettar	3,363	3,363	3,363	..
12	Sukkanar Koraiyaru	1,003	1,003	1,003	..
13	Vennar T.A.P.	593	593	593	..
14	Vennar-Vettar	225	..	225	..
15	1957 Komakodungal	3	3	3	..
16	1967 Cauvery (Thiruvaiyar) ..	135	135	135	..
17	1957 Cauvery (Thiruthuraipoondi)	99	99	99	..
18	1957 Grand Anicut	149	149	149	..
19	1957 Kudamurity	142	122	122	..
	Total ..	37,731	30,522	35,197	2,518

333. The details of trees damaged in the plantations of other Ranges by cyclone is not available.

334. The damage was maximum in Mannargudi Range, Thanjavur and Kumbakonam Ranges were also affected heavily. The plantations taken up for thinning during 1976–77 and 1977–78 plantations handed over to the custody of the Public Works Department were also affected. The Public Works Department authorities tried to sell the fallen trees themselves, but the Forest Department authorities took steps to take over all the trees. The then District Collector periodically announced that the villagers could cut and remove the trees obstructing roads and canals. The Forest Department staff recovered poles removed by villagers and brought to stock.

335. Statement showing the Teak poles obtained Rangewise Cycle affected areas.

Serial number.	*Name of the Range.*	*Number of trees salvaged.*	*Remarks.*
(1)	(2)	(3)	(4)
1	Thanjavur Range	42,261	..
2	Kumbakonam Range	9,935	..
3	Mannargudi Range	44,921	..
4	Sirkali Range	300	..
5	Pattukkottai Range	267	..
6	Tiruchirappalli Range	869	..
	Total ..	98,553	

336. Statement showing the particulars of timber and other produce obtained from the cyclone affected areas :—

Serial number.	*Particulars of produce.*	*Quantity.*	*Remarks.*
(1)	(2)	(3)	(4)
1	Teak timber	1,140M³	..
2	Sissoo Timber	62M³	..
3	Teak ploes	5,940 Nos.	..
4	Miscellaneous poles	965 Nos.	
5	Miscellaneous firewood..	2,671 tonnes	..

337. During the first week of September 1976 a function has held to dedicate the first teak plantation of 1955, Maharajapuram Reserved lands 2.5 ha (133 trees) raised in Kumbakonam Range of Thanjavur District to the memory of Thiru V. S. Krishnasamy. I.F.S., Former Chief Conservator of Forests.

338. *Cashew working circle—General constitution.*—Karunakaran's working plan constituted a cashew working circle comprising of all the cashew plantations and the areas proposed by him raising cashew.

339. *Division of the area.*—Cashew working circle was constituted with a planted area of 709.99 ha upto 1970 and 654.25 ha of proposed areas. This working circle was divided into three working series, viz., Arantangi series, Keeramangalam series and Gandarvakottai series.

340. *Analysis of the crop.*—The plantation raised upto 1974 were leased out to the Tam Nadu Forest Plantation Corporation Limited since its formation on 1st August 1974 and handed over except 1969 Avanam 31 ha and 1977 Sengipatti 40 ha plantation.

List of cashew plantations raised in Thanjavur Division is furnished below :—

341. *List of cashew plantations raised in Thanjavur Divisions.*—

Serial number.	*Year.*	*Name of Plantation.*	*Extent in ha.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)
1	1956–57	Neppugai	60.72	Transferred to TAFCORN *as per G.O. Ms. No.* 267 *Forest and Fisheries Department, dated* 3rd *April* 1974, *communicated in Chief Conservator of Forest's Ref. No.* 4342/7/52 73/J2, *dated* 29*th April* 1974.
2	1958	Komapuram	20.24	Do.
3	1959	Neppugai	20.24	Do.
4	1959	Komapuram	72.83	Do.
5	1960	Ettithalai	32.28	Do.
6	1961	Sendangudi	40.47	Do.
7	1961	Kurumbur	40.47	Do.
8	1962	Melpanaikkadu	40.47	Do.
9	1962	Do.	10.00	Do.
10	1964	Do.	12.00	Do.
11	1964	Keeramangalam	12.14	Do.
12	1965	Do.	20.23	Do.
13	1965	Do.	20.23	Do.
14	1967	Do.	20.23	Do.
15	1967	Sendangudi	10.00	Do.
16	1968	Do.	74.00	Do.
17	1968	Komapuram	40.00	Do.
18	1969	Do.	40.00	Do.
19	1970	Do.	60.00	Do.
20	1970	Neppugai	40.00	Do.
21	1970	Narpavalakudi	40,00	Do.
22	1971	Do.	42.00	Do.

Serial number.	Year.	Name of Plantation.	Extent in ha.	Remarks.
(1)	(2)	(3)	(4)	(5)
23	1971	Ettithlai	40.00	Transferred to TAFCORN Nos. No. 267, Forests and Fisheries Department, dated 3rd April 1974 communicated in C.C.'s No. 4342/73, dated 29th April 1974
24	1971	Neppugai Bit I	33.53	Do.
25	1972	Neppugai	39.25	Do.
26	1973	Sengadjgudi	19.20	Do.
27	1972	Merpanikkadu	6.20	Do.
28	1976	Silambavayal	20.00	Transferred to Tiruchi Extension Division.
29	1976	Aliyanilai	40.00	Do.
30	1977	Pilluvalaai	20.00	Do.
31	1977	Kurumbur	20.00	Do.
32	1977	Aliyanilai	11.00	Do.
33	1977	Sengipatti	40.00	Do.
34	1978	Kandu	28.00	Do.
35	1978	Pilluvalasali	18,00	Do.
36	1978	Poovathakudi	30.00	Do.

342. Due to developments and extension of departmental activities, new division have been opened. On the eve of birth of Extension forestry Division the following plantations raised with cashew was handed over Extension Forestry Division for further management as per Conservator of Forests, Tiruchirappalli circle is No. 12272/80 E, dated 6th March 1981—*Vide* Paragraph No. 391 (b).

METHOD OF TREATMENT.

343. *Intensive Cultural Operations.*—The following operations have been suggested for the maintenance of older cashew plantations :—

(1) Cutting back and clearing the intervening growth and uprootal of Homecyclia stumps once in five years.

(2) Intensive soil working around the plants to 3 cm square once in 5 years along with climb or cutting,

(3) Replacement casualities by dibbling cashewnuts in pits of 30 CM^3 if the gaps are large.

(4) If the space between the lines is large enough for tractor to manure deep ploughing with tractor with disc, plough will be done once in 5 years.

(5) Application of Chemical fertiliser at ½ to 1 kg. per plant every year.

(6) Plant protection measures such as spraying of pesticides regularly every year during flowering, etc.

344. The following cultural operations such as clearing the intervening growth up rootal of stamps soil working in the entire area, application of chemical fertilisers at 600 grams of ureal, 750 grams of super phospate and 200 grams of Muriate of potash (total 1,550 grams of chemical fertilisers) per free, were done.

345. In addition to this 500 cashew trees were marked and thinned. Plant protection measures were also undertaken by spraying endosulphant 1½ Ml. + Dithene M 45 grams per free thice with an interval of 15 days. The above operations were carried out during 1982–83 as per the instructions of the Additional Chief Conservator of Forests (Social Forestry) and the Conservator of Forests, Tiruchirappalli Circle.

(a) Cultural operation carriedout already in Cashew.

Serial number.	*Year of cultural operation.*	*Name of plantations.*	*Area in hectares.*	*Amount spent.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)	(6)
1	1976–77 ..	1970 Narpavalakudi	40 ha.	840.00	During 1981 these plantations have been handed over to Extension Forestry Division, Tiruchirapalli as per Conservator of Forest's circular No. 12272/80 E1, dated 6th March 1981 on 13th April 1981 subsequantly handed.
2	1977–78 ..	1970 Narpavalakudi	40 ha.	1,071.00	
3	1976–77 ..	1971 Narpavalakudi	42 ha.	770.00	
4	1977–78 ..	1971 Narpavalakudi	42 ha.	1,080.00	
5	1976–77 ..	1976 Silambavayal	20 ha.	5,515.00	
6	1977–78 ..	Do.	20 ha.	1,244.00	
7	1977–78 ..	1976 Alianilai ..	40 ha.	1,080.00	
8	1977–78 ..	1977 Pillavalasai ..	20 ha.	5,340.00	
9	1977–78 ..	1978 Alianilai ..	11 ha.	2,628.50	
10	1979–80 ..	1969 Avanam ..	31 ha.	13,000.25	
11	1980–81 ..	Do.	31 ha.	4,550.00	
12	1980–81 ..	1970 Narpavalakudi	40 ha.	5,700.00	
13	1980–81 ..	1971 Navpalakudi	42 ha.	3,200.00	
14	1982–83 ..	1969 Avanam ..	31 ha.	24,578.75	

(b) Intensive maintenance works for cashew cultivation done in Forest area.

Serial number.	*Year.*	*Name of Range.*	*Name of Plantation.*	*Extent in ha.*	*Details of work done.*	*Amount.*
(1)	(2)	(3)	(4)	(5)	(6)	(7)
						RS.
1	1972–73	Nos. Range Thanjavur.	1956 Neppugai CRA.	20.00	Replacement of Casuarina.	250.00
2	Do.	Do.	1957 Neppugai CRA.	40.00	Replacement of Casuarina and forming of Sauver.	1,396.00
3	Do.	Do.	1970 Komapuram	60.00	Clearing uprootal disc ploughing and replacement of casuarina.	7,766.00
4	Do.	Do.	1971 Neppugai Bit I.	83.00	Gap filling and soil working Disc. ploughing and spraying of pesticides.	9,733.46

(1)	(2)	(3)	(4)	(5)	(6)	(7)
5	1972–73	No. I Range Thanjavur.	1971 Neppugai Bit II.	64.00	Clearance and uprootal of inner growth gap filling and soil working spraying of pesticides and disc. ploughing.	10,835.25
6	Do.	Do.	1971 Neppugai Bit III.	97.00	Gap filling and soil working disc. ploughing and spraying of pesticides.	12,264.64
7	Do.	Do.	Do.	..	Weeding and soil working application of NPK fertiliser.	7,558.00
8	Do.	Pattukottai Range.	1962 Merpanai kadu.	40.00	Clearing, replacement and weeding and soil working.	688.00
9	Do.	Do.	1969 Avanam	37.00	Replacement of Casualities and spraying of pesticides.	1,183.59
10	Do.	Do.	1969 Avanam	37.00	Replacement of Casualities spraying of pesticides.	..
11	Do.	Do.	1961 Sendagudi	40.00	Weeding and soil working and spraying and pesticides.	..
12	Do.	Do.	1968 Sendangudi	74.00	Clearing miscellaneous growth over 42.25 ha. and spraying pesticides.	..
13	Do.	No. I Range Thanjavur.	1971 Neppugai Bit I.	83.00	Weeding and soil working and application of N. P. K. Mixture.	..
	Do.	Do.	1971 Meppugai Bit II.	64.00	Weeding and soil working and application of N. P. K. fertilizer.	..
15	Do.	Do.	1971 Ettiyathalai	40.00	Replacement of Casualities gap filling and soil working nad plant of protection measures.	..

(1)	(2)	(3)	(4)	(5)	(6)	(7)
16	1972–73	Do.	1967 Komapuram	40.00	Clearing and up-rootal of miscellaneous growth ploughing, etc.	..
17	Do.	Do.	1969 Komapuram		Do.	..
18	1973–74	Pattukottai	1964 Morpanaikadu	12.00	Clearing and uprootal of Miscellaneous growth ploughiing, etc.	..
19	Do.	Do.	1965 Do.	12.00	Clearing and uprootal of Miscellaneous growth ploughing, etc.	..
20	Do.	Do.	1965 Do.	20.00	Clearing uprootal of miscellaneous growth ploughing, etc.	..
21	Do.	Do.	1965 Do.	20.00	Do.	..
22	Do.	Do.	1967 Sendangudi	10.00	Do.	..
23	Do.	Do.	1969 C.R.A.	57.00	Do.	..

345. *Casuarina Working Circle—General constitution.*—Casuarina working circle comprised of all the casuarina plantations, as well as the areas proposed for planting during the currency of the plan.

347. Karunanakaran constituted this working circle with two felling series namely the coleroon series and the cauvery series. The irregular planting programme coupled with scattered nature of areas of the past rendered the auther helpless in dividing the area into equi productive annual coupes.

348. *Analysis of the crop.*—Casuarina plantations vary in stocking from place to place Cyclonic wind and annual floods cause considerable damage to the plantations. Seedlings were washed away and due to meandering of the rivers areas fertility of the soil abro varies. The fierce cyclone of 1977 also caused heavy damages.

349. *Division of the area.*—The List of Casuarina plantations raised during this plan is furnished below :—

349. A list of Casuarina plantations raised in Thanjavur Division upto 1982 is furnished below :—

List of Casuarina plantation in Thanjavur Division :—

Serial number and name of Range.	*Locality.*	*Year of planta-tion.*	*Coupe number.*	*Extent in ha.*	*Spacing percentage of survivals.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1 Kumbakonam	Maharajapuram	1974	Bit II	17.00	2.5 x 2.5	..
	Do.	1976	Bit I	4.00	2.5. x 2.5 11 per cent.	..
		1977	Bit I & II	12.00	2.5. x 2.5 16 per cent.	failure

Koozhalayar ..	1978	..	16.00	2.5 x 2.5 55 per cent.	Seashore Casuarina Plantation
Kodiampalayam	1978	..	20.00	2.5 x 2.5 45 per cent.	Do.
Velangudi ..	1978	..	22.00	2.5 x 2.5 25 per cent.	165 ha. restock during 1979.
Do.	1979	Bit II	29.00	Do.	Seashore Casuarina plantation.
Pudupattinam CRA	1979	..	13.00	2.5 x 2.5 60 per cent.	..
Do.	1979	..	14.00	2.5 x 2.5 60 per cent.	..
Do.	1979	..	28.00	2.5 x 2.5 50 per cent.	..
Nagore ..	1980	..	25.00	2.5 x 2.5 50 per cent.	Seashore Casuarina plantation.
Thirumullaivasal	1980	..	25.00	2.2 25 per cent.	Do.
Koozhalayar ..	1980	..	3.00	2.2 30 per cent.	Do.
Mudaliamadu ..	1980	..	14.00	2.2 40 per cent.	Do.
Pudupattinam ..	1980	..	23.00	2 x 2 50 per cent.	Do.
Keelamoovarakarai	1981	..	15.00	Do.	Failure
Nagore ..	1982	..	1.6	70per cent.	Seashore
Pudupattinam ..	1982	..	10.00	Do. 75 per cent.	..
Do.	1982	..	..	..	..

Deducting failure area 505.01 ha.

METHOD OF TREATMENT.

350. The silvicultural system followed was clear felling following artificial regeneration with Casuarina.

351. *Rotation.*—A rotation of 7 years has been followed.

2. Statament showing the Casuarina coupes felled and field and revenue obtained from 1972–71 to 1912–83 in Thanjavur Division is furnished below :—

Serial number and name of the range.	Name of the plantation.	Year of formation.	Area in ha.	Yield of felling.	Total yield.	Yield in tonne per ha.	Total revenue	Revenue per ha.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1 Sirkali	Alakudi	1963	8.9	1969–70	150 ton	16.852	26,125.00	2,935.39
2 Do. ..	Pudupattinam	1963	8.35	1969–70	74.5	8.921	10,015.00	1,319.16
3 Pattukkottai	Udayamarthandapuram	1963	11.0	1969–70	15.0	1.362	430.00	39.09
4 Sirkali	Mudalaimadu	1964	6.72	1970–71	15/HL Casuarina material.	32.290	50,505.00	7,515.63
5 Do. ..	Sodiakudi	1964	6.4	1970–71	140 1/2	32.732	20,005.00	3,125.78
6 Kumbakonam	Maharajapuram Bit I	1964	9.35	1970–71	90.0	9.631	8,001.00	855.72
7 Do. ..	Maharajapuram Bit II	1964	8.74	1970–71	56.0	6.410	5,201.00	595.08
8 Sirkali	Sodiakudi Bit I	1965	10.43	1971–72	119 1/2	11.461	11,800.00	1,131.35
9 Do. ..	Sodiakudi Bit II	1965	5.38	1971–72	100	18.593	8,275.00	506.00
10 Do. ..	Sodiakudi Bit III	1965	15.5	1971–72	150	9.684	9,735.00	628.08
11 Do.	Pudupattinam Bit I & II	1966	27.39	1971–72	303 1/2	11.080	85,005.00	3,103.00
12 Pattukkottai	Udayamarthandapuram	1965	4.5	1971–72	39 H/L	..	2,010.00	446.67
13 Sirkali	Pudupattinam Bit I and II	1966	7.43	1972–73	269.0	36.201	20,525.00	3,762.45
14 Do. ..	Mudaliamadu Bit I and II	1966	6.7	1972–73	65.0	9.702	22,020.00	3,268.57
15 Do. ..	Mudaliamadu Bit II	1966	6.19	1972–73	62.5	10.103	18,005.00	2,908.72
16 Do. ..	Pudupattinam Bit I and II	1966	7.25	1972–73	107.0	14.759	23,035.00	3,177.24
17 Do. ..	Pudupattinam Bit III	1967	12.27	1974–75	50 1/2 1 ton milar	4.116	22,100.00	1,801.14
18 Do. ..	Pudupattinam, Bit IV	1966	3.85	1974–75	1 35	35.065	16,190.00	4,2051.19
19 Do. ..	Pudupattinam, Bit I	1967	4.37	1974–75	50	12,586	12,000.00	2,756.00
20 Do. ..	Alakudi, Bit II	1967	6.13	1974–75	130.00	21.207	5,070.00	227.08
21 Do. ..	Sodiakudi, Bit IV	1966	16.18	1974–75	242.0	15.012	40,105.00	2,487.90
22 Do. ..	Sobiakudi, Bit, V	1966	9.17	1974–75	110.0	11.996	21060.00	2296.62

23	Kumbakonam	Maharajapuram, Bit III	1967	19.94	1974-75	186.0	9.338	20,660.00	1,036.11
24	Pattukottai	Udayamarthandapuram	1968	15.91	1974-75	212.00	13,325	23,010.00	1,446.26
25	Kumbakonam	Maharajapuram Casuarina plantation.	1969 71 and 72	..	1974-75	..	..	3,525.00	To remove the Casuarina trees saplines from 1969—71 and 72 Maharajapuram R.L.
26	Sirkali	Pudupattinam, Bit VI	1968	17.76	1974-75	263 1/2 ton	14,837	40,110.00	3,258.45
27	Do.	Pudupattinam, Bit VII	1968	6.26	1974-75	169	26.997	11,100.00	1,773.16
28	Do.	Mudalaimedu, Bit III	1968	16.56	1974-75	109	6.582	39,105.00	2,361.41
29	Do.	Kumbakonam	1969	4.3	1975-76	70	16.279	8,275.00	1,924.42
30	Do.	Maharajapuram	1969	12.93	1975-76	318	24.594	29,100.00	2,250.58
31	Do.	Pudupattinam	1970	..	1975-76	38 trees removed.	..	150.00	..
32	Do.	Do.	..	..	1975-76	1 1/2	..	455.00	293.55 Removed 40 dead trees.
33	Do.	Alakkudi	1970	8.4	1975-76	5	..	370.00	74.00 Removed 167 dead trees
34	Do.	Alakkudi	1970	..	1975-76	10 1/2	1.220	5,895.00	691.00
35	Do.	Pudupattinam	1976	9.10	1975-76	63.0	6.923	44,530.00	4,893.41
36	Do.	Alakkudi	1970	8.8	1976-77	244 1/2	72.768	17,005.00	5,061.01
37	Do.	Pudupattinam	1976	3.36	1976-77	59 CRA 28 Babul	6.705	8,205.00	932.30 Casuarina and Babul plantation.
38	Do.	Padupattinam, Bit I	1971	6.4	1976-77	250 1/2	18,792	11,045.00	11,828.58
39	Do.	Mudalaimadu	1970	13.3	1977-78	147 3/4	23.086	24,850.00	3,882.81
40	Kumbakonam	Maharajapuram, Bit II	1971	8.0	1977-78	160	20,000	22,815.00	2,851.88
	Do.	Maharajapuram, Bit I	1971	9.0	1977-78	142,0	15,778	24,805.00	2,756.11

Serial nnmber and name of the range.	Name of the plantation.	Year of formation.	Area in ha.	Yield of felling.	Total yield.	Yield in ton per hectare.	Total revenue.	Revenue per ha.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
42 Kumbakonam	Maharajapuram, Bit II	1971	14.67	1977-78	415 1/2	28.323	56,205.00	3,831.29
43 Do.	Maharajapuram	1972	13.0	1977-78	96.0	7.385	12,695	976.54
44 Do.	Maharajapuram	1972	14.0	1978-79	330.0	14,348	44,010.00	1,913.48
45 Sirkali	Pudupattinam	1972	14.0	1978–79	202.0	14.429	45,550.00	3,253.57
46 Do.	Do.	1972	13.0	1978–79	348½	26.808	80,000.00	6,153.85
47 Do.	Do.	1972	27.39	1978–79	599.00	21.869	1,27,550.00	4,566.00
48 Thanjavur	Vadugagudi	1973	10.20	1979–80	114.0	11.176	21,200.00	3,078.43
49 Kumbakonam	Maharajapuram, Bit II	1973	6.90	1969–70	46.0	6.667	9,190.00	1,331.88
50 Do.	Maharajapuram, Bit III	1973	16.40	1979–80	101.0	6.159	17,100.00	1,042.68
51 Sirkali	Pudupattinam, Bit I	1973	14.60	1979–80	751.0	51.438	2,61,200.00	17,890.41
52 Do.	Pudupattinam, Bit II	1973	9.0	1979–80	266.0	29,556	1,16,000.00	12,888.00
53 Thanjavur	Vadugagudi	1974	12.0	1979–80	142½	10,962	49,500.00	3,807.69
54 Do.	..	1973	13.0	1980–81	..			Supply of Casuarina pole brushe wood for flood relief work 675 trees 2 1:2 ton miler 6/1C.
55 Sirkali	Pudupattinam, Bit IV	1974	4.0	1981–82	90.0	22.5	2,15,750.00	3,931.50
56 Do.	Pudupattinam, Bit V	1974	12.27	1981–82	100.00	8.150	19,075.00	1,554.60

Pruning :

353. Mr. Karunakaran prescribed pruning at the fourth year of plantingincluding the year os planting so that the persistant lateral branches could be removed enabling better aeration, easy movement inside the plantation for inspection, checking and counting, etc.

354. Besides achieving the above the pruned material fetches an intermediate revenue to the department.

355. Statement showing the list of Casuarina plantations pruned from 1970-71 to 1982-83 with revenue realised is furnished below :—

Serial number.	*Name of Range.*	*Year of pruning.*	*Name of Plantations.*		*Area in hectares.*	*Amount realised.*
(1)	(2)	(3)	(4)		(5)	(6)
1	Sirkali	1970-71	1969	Alagudi	6.07	51.00
2	Do. ..	Do.	1967	Pudupattinam	4.05	120.00
3	Do. ..	Do.	1967	Do. ..	12.14	501.00
4	Do. ..	Do.	1967	Do. ..	4.45	205.00
5	Do. ..	Do.	1967	Sodiakudi	8.09	224.00
6	Kumbakonam ..	Do.	1967	Maharajapuram ..	21.45	53.00
				Department Collection C.F.'s No. 5882/70.		
7	Sirkali	1971–72	1968	Mudalaimadu	16.80	525.00
8	Do. ..	Do.	1968	Pudupattinam	16.60	655.00
9	Do. ..	Do.	1968	Do. ..	6.8	65.00
10	Do. ..	Do.	1968	Udayamarthandapuram	15.40	415.00
11	Tiruchirapgalli ..	1972–73	1968	Mahadhanapuram ..	40.47	305.00
12	Sirkali	Do.	1969	Pudupattinam ..	9.6	405.00
13	Kumbakonam ..	Do.	1969	Maharajapuram ..	14.00	250.00
14	Do. ..	Do.	1969	Do. ..	4.5	55.00
15	Sirkali	1973–74	1970	Pudupattinam	8.80	436.00
16	Do. ..	Do.	1970	Alakkudi	7.60	365.00
17	Tiruchi rappalli ..	Do.	1970	Mahadanapuram ..	8.00	250.00
18	Sirkali	1974–75	1971	Pudupattinam	14.64	750.00
19	Do. ..	Do.	1971	Mudhalaimadu ..	6.40	285.00
20	Kumbakonam ..	Do.	1971	Maharajapuram Bit I	8.00	123.00
21	Do. ..	Do.	1971	Maharajapuram Bit II	8.70	137.00
22	Sirkali	1975–76	1972	Pudupattinam	14.00	1,020.00
23	Do. ..	Do.	1972	Do. ..	27.39	1,575.00
24	Do. ..	Do.	1972	Do. ..	13.00	2,510.00
25	Do. ..	Do.	1972	Do. ..	14.68	3,510.00

Serial number (1)	Name of Range (2)	Year of pruring (3)		Name of plantation (4)	Area in hectare (5)	Amount realised (6)
26	Kumbakonam ..	1975-76	1972	Maharajapuram ..	23.00	220.00
27	Sirkali	1976–77	1972	Mudalaimadu	8.00	310.00
28	Do. ..	Do.	1973	Mudhalaiamadu ..	12.89	225.00
29	Thanjavur ..	Do.	1973	Vadukkudi	10.20	225.00
30	Kumbakonam ..	Do.	1973	Maharajapuram ..	13.00	210.00
31	Do. ..	Do.	1973	Maharajapuram Bit III	7.50	130.00
32	Do.	Do.	1973	Maharajapuram Bit I ..	14.75	225.00
33	Do.	1977–78	1974	Alakkudi	6.13	80.00
34	Do.	Do.	1974	Gopalasamudram ..	4.00	105.00
35	Do.	Do.	1974	Sodiakkudi ..	44.00	325.00
36	Do.	Do.	1974	Pudupattinam	24.57	605.00
37	Do. ..	Do.	1974	Maharajapuram ..	17.00	402.00
38	Thanjavur ..	Do.	1974	Vadukkakudi	12.00	107.00
39	Sirkali	Do.	1975	Pudupattinam	17.76	535.00
40	Do. ..	Do.	1975	Do. ..	6.76	320.00
41	Do.	Do.	1976	Pudupattinam	9.00	310.00
42	Do. ..	Do.	1976	Do. ..	5.30	205.00
43	Do. ..	Do.	1976	Do. ..	7.00	255.00
44	Do.	Do.	1976	Gopalasamudram ..	13.00	435.00
45	Do.	Do.	1976	Do. ..	16.56	90.00
46	Sirkali	1980–81	1977	Pudupattinam Bit I ..	8.36	150.00
47	Do. ..	Do.	1977	Do. ..	8.00	530.00
48	Do. ..	Do.	1977	Do. ..	20.00	1,015.00

MANGROVE WORKING CIRCLE.

Section-1.—General constitution and character of the vegetations :

356. The working circle comprised of Mangrove forests of Muthupet Reserved Forests and the exploited area of 121.41 hectares in Tamarankottai felling series proposed in K.P.D. Rao's Plan.

357. The other mangrove Forests such as that at the month of the coleroon river. Pudupattinam, Mangorve forests in Tilanayar and chatram Forests (Thuraikadu) were given complete rest during the currency of the plan as they have been exploited during K.P.D. Rao's plan.

Section 2.—Division of the area :

358. The total area of the Working circle when constituted by Karunakaran was 302.67 hectares as detailed below :—

Serial number.	*Name of the series.*	*Area in hectares.*
(1)	(2)	(3)
1	Tamarankottai felling series	121.41
2	Muthupet felling series	81.26
	Total ..	302.67

Section 3.—Analysis and valuation of crop :

359. Mangrove forests undergo periodic changes due to the new accretions and vegetation colonising freshly sitted up areas. Moreover some of the areas which contained from growth in the past have gone above the high flood level resulting in the dis-appearance of growth. The wooded area is about 3.4 percent of the gross area in Muthupet Mangorve Forest. In the absence of regular immudation Avicennia rapidly deteriorates.

Section 4.—Method of Treatment :

360. Proposed silvicultural system was clearfelling with natural regeneration as Avicennia officianalis produced profuse viviparous seeds and prolific regeneration were noticed. However it was prescribed to retain recruits upto a height of 2 m.

361. *Yield rotations.*—In the absence of any precise data Karunakaran's plan fized a tentative rotation of 20 years. The yeild obtained and the particulars of area felled under this working circle furnished below :—

Section 7.—Other regulations :

362. During the currency of Karunakaran's plan five coupes were worked three in Thamarankottai series and four coupes in Muthupet series were worked.

363. A Statement showing the details of coupes worked with yield is furnished below :—

Serial number and Locality.	*Coupe number.*	*Extent in hectares.*	*Year of felling.*	*Yield in tonnes.*	*Yield in tonnes /hectare (Average.)*
(1)	(2)	(3)	(4)	(5)	(6)
1 Thamarankottai	XI	40.79	1970-71	297.00	7.286
2 Do. ..	XII	39.41	1971-72	209.00	5.34
3 Do. ..	XIII	37.90	1973-74	328.00	8.65
4 Muthupet ..	I	25.96	1974-75	100.00	3.85
5 Do. ..	II	33.45	1974-75	324.00	6.96

NOTE.—The Mangrove coupe leases were dropped and the mangrove Forests were declared as Nature reserves in Chief Conservator's No. R.Dis. 19032/73, K-4, dated 13th March 1975 and further operations have been curbed.

MINOR FOREST PRODUCE WORKING CIRCLE.

Section I.—General Constitutions :

364. The Minor Forest Produce Working Dircle covers all the Reserved Forests and Reserve lands and unreserves of the Division that are under the control of the Forest Department and this working circle will regulate the exploitation of all items of Forest produce which have not been separately dealt with under any of the other working cricle.

Section-2.—Analysis of the crop :

365. The major item of M.F.P. of this Division is the right of fishing in the creeks Lagoons pits, puddles and rivers in side the area under the control of the Forest Department. The other items of M.F.P. are not considerable.

366. The author has enumerated 36 items of Minor Forest produce. A detailed list showing the name of the produce, part of the plant and their use is furnished below :—

List of Minor Forest Produce items in Thanjavur Division.

Serial number.	*Name of the produce.*	*Botanical Name.*	*Part of the plant useful.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)
	A. Bark—			
1	Avaram bark ..	Cassia auriceelata	Tanning	..
2	Konnai bark ..	Cassia fistula	Do.	..
	B. Fruits—			
3	Nellikai	Eublicaaffinalis	Ricles	..
4	Wood apple ..	Feronia imonia	Edible	..
5	Tamarind ..	Tamarindus indica	Do.	..
6	Veerai	Dry petes sepiaria	Do.	..
7	Kalakkai	Carrissa carandees	Do.	..
8	Elandai	Zizaphus mauritiana ..	Do.	..
9	Sundakai	Solamum mauritiana ..	Do.	..
10	Kodukkapulli ..	Ingadulces	Do. .. —	..
11	Coconut	Gecus Neecifara	Coir making ..	..
12	Palmyrah	Borrasus and Levelliber ..	Edible coirmaking..	..
13	Illupai	Madhuca longiflia	Edible (Flowers fruits yield oil and cake.)	..
14	Mango	Mangifera indica	Edible	..
15	Soapnut	Sapindus emarginatus ..	Washing	..
16	Custard apple ..	Annona squmosa	Edible	..
17	Palai	Manilkora Hexandra ..	Do.	..
18	Naval	Sybygiun cumini	Do.	..
19	Eacham	Phonix sylvestris	Do.	..
20	Illupai ..	Madhuca indica	Do.	..
21	Neem	Azardirachta indica ..	Do.	..
22	Pinnai ..	Calophyllum inophyllum ..	Oil	—
23	Silk cotton ..	Bombax Malabaricum ..	Stuffing matresses.	—

Serial number	Name of the prodncts.	Botonical Name	Part of the plant useful.	Remarks
(1)	(2)	(3)	(4)	(5)
	C. Seeds :—			
24	Porosankottan ..	Thespesia populnea ..	Medical purposes ..	..
25	Ettikottai ..	Strychnos nux. vomica ..	Yiled strych ..	..
26	Pungam	Pongamia pinnata	Oil	..
	D. Leaves :—			
27	Keyan leaves ..	Memycelon heyneanum ..	Dyeing	..
28	Eachan	Phoenix avanlis	For met and roofing	..
29	Aloe fibra	Aloe americana	For broom fibre ..	..
	E. Stem—			
30	Canes	Calamus roting	Basket making ..	..
	F. Flower—			
31	Magali	Manikara elengai	Flowers ornamental Seeds give oil.	..
32	Thazzhai	Pandanus Odaratiss	Flower	..
33	Kattamanakku ..	Jatropha gossipifolin ..	Fence plant ..	..
	G. Other items :—			
34	Lime shells (killinjal)	....	For lime ..	..
35	Kondraipu (Grass)	....	....	..
36	Vembadampatti ..	Ventilago maderaspatana ..	Root bark ..	..

Section 3—Method of Treatment :

367. Except the following items of Minor Forest Produce all the other items occuring in the forests of Thanjavur Division have been sold as one unit. The other items which are sold as separate units are (1) Elandai.

368. *Zizupus manritiana* : *Fruits.*—Usufructs of coconut Palm (3) Right of fishing in pits, Puddle, creeks and lagoons inside the Reserve Forest and Reserve Lands and (4) Cassia auriculata Avaram and (Cassia fistula) Konnai bark.

369. The Revenue realised by the sale of Minor fresh produce items (except cashew usufructs and fishing lease) in the division is furnished below :—

Serial number.	Year.	Amount realised in.	Remarks.
(1)	(2)	(3)	(4)
		RS. P.	
1	1970	716.00	5 units.
2	1971	635.00	3 units.
3	1972	2,750.00	5 units.
4	1973	1,052.00	3 units.
5	1974	3,652.00	Important items of M.F.P. soild in this Division are bamboos.
6	1975	8,885.00	....

Serial number.	*Year*	*Amount realised in.*	*Remarks.*
(1)	(2)	(3)	(4)
		Rs. P.	
7	1976	18,722.00	....
8	1977	11,148.00	....
9	1978	10,200.00	....
10	1979	1,759.00	13 kinds of M.F.P. and Maharajapuram Elathai unit.
11	1980	1,730.00	Do.
12	1981	3,550.00	Do.
13	1982	3,030.00	Do.

370. *Palmyrah lease.*—In para 707 of the current working plan it is prescribed that 3,500 palmyrah trees in the Manamelgudi forests be leased out annually in auction for tapping today. The lease period has been fixed as three years so that the lease will maintain, manure and do so well for the plantation, if the lease periods is a long one. Accordingly this unit was offered for sale during 1970-71 and 1971-72 there was no demand. During 1972-73 this unit was sold in auction for Rs. 460 with a voidah of 3 years. The lease period expired on 31st December 1974. Subsequently the entire area has been handed over toTAFCORN on lease as per G.O. Ms. No. 267,Forests and Fisheries Department, dated 3rd April 1974 communicated in Chief Conservator of Forest's Ref. No. 4342/73 J. 2, dated 29th April 1974 on 1st August 1974.

371. *Coconut plantation.*—Coconut has been raised at Manamelgudi between 1963 and 1965. The prescription laid down a lease period of 3 years from April 1971. A list of coconut plantation encolsed in Udayamarthandapuram Reserve Forest coconut grove. The encroachments could not be evicted as the Government stayed the action initiated against them for the recovery of the lease amount under land revenue reoovery Act (*Vide* Chief Conservator's Ref. No.167/72/G1) and Government Memo. No.86622/F.R. II/71-II,Agriculture,dated 10th February 1973. The lease period expired on 7th September 1973. The matter was reported to Chief Conservator of Forests in Divisional Forest Officer's Ref. No. 6026/68 L, dated 28th December 1973, for taking further action. The Chief Conservator of Forests had instructed the Divisional Forest Officer to sell the right of collection of usufructs in Public auction after consulting the Government pleader. Tanjore *Vide* Chief Conservator of Forest's Ref. No. 167/72 G1 dated 11th January 1974 . The sale was held on 17th January 1974 but none turned up for sale. The Government in his memorandum No.5589/F.R./11/74-1,Forests andFisheries,dated 10thFebruary 1974 instructed not to hold sale pending orders and instructed to state whether sale has already been confirmed or not. A report submiitted to the Chief Conservator of Forests in Divisional Forest Officer's Ref. No. 6026/68-L, dated 18th February 1974. under the instructions of the Divisional Forest Officer the Range Officer Pattukottai collected 301 coconuts, cocnut leaves and 30 Palai depeartmentally and sold them in Public auction for Rs. 175. The area has been leased out as per Govt. Memo. 86622/F.R. -I/III/71-25, dated 27th April 1976 to the encroachers for a period of 10 years. Upto 30th June 1984. Subsequently on 1st August 1974 the coconut grove at Manamelgudi has been handed over to TAFCORN as per G.O. Ms. No. 267, Forests and Fisheries Department, dated 3rd April 1974.

COCONUT LEASE IN UDAYAMARTHANDAPURAM RESERVED FOREST.

Serial number and name of person.	*Area and S.F. number.*	*A. c. Ca.*	*Coconut trees yielding.*	*One year two years old coconut trees not yielding.*	*Total number of trees.*
(1)	(2)	(3)	(4)	(5)	(6)
1 Narayanasamy, Thevar C/o. Veeriaha Thevar Thillaivilagam.	657	0.95 0.90	.. 53	.. 6	59
2 Sivaperumal Thevar, C/o. Veeriah Thevar, Thillaivilagam.	657	1.68	.. 75	.. 3	78
....					
3 Veeriah Thevar C/o. Subbiah Thevar, Keelakarai, Thillaivilagam.	657 657	1.72 0.11	98 4	8	110

Serial number and name of person.	Area and S.F. number.	A. c. Ca.	Coconut trees yielding	One year two years old coconut trees not pielding	Total number of trees.
(1)	(2)	(3)	(4)	(5)	(6)
4 Venkuttusamy Thevar, Veerasamy Thevar, Keelakkarai, Thillaivilagam.	668	3.89	163	78	241
5 Ramachandra Thevar, C/o. Muthiah Thevar, Keelakkarai, Thillaivilagam.	668	0.90	36	65	101
6 Subbiah Thevar, C/o. Rengasamy Thevar, Thillaivilagam.	668	0.04	2	2	4
7 Ramasamy Thevar, C/o. Vadivel Thevar, Thillaivilagam.	657	0.61	36	..	The rent of Rs. 2 per tree per year shall continue for ten years from 1st July 1974, from 1st July 1974 as per the Government Memorandum No. 86622, Forest and Fisheries, dated 27th April 1987.
		10.80	467	162	629

372. Even though prescriptions of the Working Plan say that coconut groves should be leased out for a term of three years, coconut grove were leased out annually. A list showing the lease particulars is appended.

Coconut lease in Thohu 1957 *Compact* (*Teak*) *from* 1969 *to* 1982.

Area 1.65 Ac. 0.81 ha. (24 coconut trees).

Serial number.	*Name of the plantation.*	*Year of lease.*	*Revenue realised on each year.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)
			RS. P.	
1	Thokkur coconut ..	1969-70	70.00	Right to collect usufructs leased to contractors.
2	Do. ..	1970-71	60.00	Do.
3	Do. ..	1971-72	65.00	Do.
4	Do. ..	1972-73	65.00	Do.
5	Do. ..	1973-74	72.00	Do.
6	Do. ..	1974-75	90.00	Do.
7	Do. ..	1975-76	60.00	Though the unit was leased out these was no yield.
8	Do. ..	1976-77	68.00	Leased out to contractors.
9	Do. ..	1977-78	63.00	Do.

Serial number.	*Name of the plantation.*	*Year of lease.*	*Revenue realised on each year.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)
10	Thokkur Coconut ..	1978-79	63.00	No trees have reduced from 24 to 21 trees.
11	Do. ..	1979-80	85.00	Number of trees have reduced from 24 to 21 trees.
12	Do. ..	1980-81	65.00	Number of trees have reduced from 24 to 21 trees lease cancelled by Thanjavur Divisional Forest Officer in No. 15277/DL/dated, 2nd February 1981 and the lease amount forfetted to Government.
13	Do. ..	1981-82	95.00	Leased out to contractors.

373. List of coconut plantation raised in Manamelgudi Reserve Land.

Serial number.	*Year of plantation.*	*Name of the plantation.*	*Area in planted.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)
1	1963	Manamelkudi ..	16.19	Handed over to TAFCORN, Pudukkottai Division as per G.O. Ms. No. 267, Forest and Fisheries, dated 3rd April 1974.
2	1964	Do. ..	16.19	
3	1964	Do. ..	16.19	
		Total ..	48.57	

374. Coconut and Palmyrah Lease in Pattukkottai and Aranthangi Ranges.

Year of lease.	*Lease period.*	*Name of the Range.*	*Name and year of plantations.*	*Area in A.C.*	*Revenue realised.*
(1)	(2)	(3)	(4)	(5)	(6)
1972-73 ..	From 16th August 1972 to 31st March 1974.	Aranthangi..	1963 Manamelgudi coconut plantation.	40.00	450
	Do.	Do. ..	1964 Manamelgudi coconut plantation.	40.00	430
	Do.	Do.	1965 Manamelgudi coconut plantation.	40.00	180

375. *Fishing leases.*—There were four fishing leases viz :—(1) Muthupet fishing lease, (2) Thottam Fishery lease, (3) Manamelgudi fishing lease and (4) Talayanayar Fishing lease prescri- hed in the current plan.

376. *Muthupet fishing lease.*—In continuation to the G.O. Ms. No. 1023, Agriculture, dated 31st March 1970 this fishing unit was given to the fishermen co-operative society on lease on negotiation. In Muthupet Reserve Forest Fishing was free in the lagoon to the fishermen of Muthupet and adjoining villages. There were no lease from 1977-78 to 1979-80 in Muthupet fishing lease area.

377. *Thottam fishing lease.*—This unit comprises of Vadakadu Narvakadu and Thuraikadu. Even since 1965, this unit was given on negotiation to the fishermen co-operative societies ar per G.O. Ms. No. 865, Forest and Fisheries, dated 6th March 1965 and the revenue realised credited to the Fisheries Department.

378. *Manamelgudi Fishing lease.*—The current plan prescribes that this unit should be sold as a separate unit and the revenue realised credited to the Forest Department. But this unit was sold during 1971-72 for Rs. 55. No action was taken in the subsequent years in that line.

379. *Talanayar fishing lease.*—In Talanayar Reserve Forest, the right to fishing was sold in auction by the Revenue Department along with the right for fishing in the creeks and streams in the adjoining reserves. Action has been as per the suggestions of the working plan officer and addressed to the Government. Since 1979-80 the entire Talanayar Fishing lease area has been leased out by the Forest Department as per G.O. Ms. No. 189, Forest and Fisheries, dated 6th March 1979 and G.O. Ms. No. 894, Rural Development and Local Administration Department, dated 7th July 1979.

380. A statement showing the particulars of fishing units leased out and the revenue realised from these units are furnished below:—

Serial number.	*Year.*	*Talanayar fishing unit.*	*Chatram forest unit.*	*Thottam fishery unit.*	*Muthupet and Puddlers.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	1970–71	..	..	3,501.00	3,626.00	....
2	1971–72	..	55.00	7,385.00	3,162.00	Chatram forest fishing unit fisher in streams tanks, Manamel-kudi.
3	1972–73	..	..	7,470.00	3,960.00	....
4	1973–74	..	..	6,570.00	4,510.00	....
5	1974–75	..	..	7,183.00	4,347.00	....
6	1975–76	..	..	8,000.00	4,496.00	....
7	1976–77	..	..	9,990.00	1,500.00	....
8	1977–78	..	..	9,900.00	Sale dropped	.... Lease Unit was dropped in Chief Conser-vator of Forest C. No. 7309/78, dated 22nd April 1979.
9	1979-80	3,060.00	..	10,800.00	Not leased out during 1979–80	Right to fish in pits and puddles in Muthupet Reserve Forest in Pattukkottai. Range Chief Conservator of Forest No. 22519/79, dated 27th April 1980, Divisional Forest Officer's No. 9128/79.
10	1980-81	9,900.00	..	1,026.00	2,052.00	....
11	1981–82	13,365.00	..	6,750.00	2,052.00	....
12	1982–83	12,690.00	..	7,380.00	22,700.00	....

381. *Konnai and Avaram bark.*—The working plan laid down prescriptions to sell the entire division as unit for the collection of Konnai and Avaram bark, once in five years with a lease period of one year. But sale has been dropped from 1971–72. A list showing the revenue realised by sale of this unit is furnished below:—

Revenue realised from M.F.P. units of Thanjavur Forest Division from 1970–71 *to* 1981-82.

Serial number.	*Lease year.*	*Name and the items.*	*Name of the area.*	*Revenue.*	*Yield.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	1970–71 ..	Konnai bark.	Kodiakadu Reserve Forest.	100.00	....	
2	1970–71 ..	Avaram barkpalai Fruit Naval Fruit Kondarai	Neppugai Kandharvar-kottai M.F.P. Unit.	40.00	....	
3	1970–71	..	..	..		Sale dropped as per Conservator of Forest's No. 100471 L2, dated 10th November 1972 Divisional Forest Officer's No. 4216/72 L3.
4	1972–73 ..	..	..	..		Sale dropped.
5	1973–74 ..	..	..	..		Sale dropped as per C.F' No. 7343/73, dated 18th April 1974.
6	1974–75 ..	..	..	..		Sale dropped as per Conservator of Forest's No. 21, dated 1st January 1974. Divisional Forest Officer No. 4141/74.
7	1975–76 ..	..	..	..		Sale dropped as per Conservator of Forest's No. 9075/75-L, dated 6th November 1975.
8	1976–77 ..	Konnai bark and Avaram bark.				Sale dropped demand from public as per Conservator of Forest's No. 6762/76, dated 4th February 1976.
9	1977–78 ..	..	..	..		Sale dropped.
10	1978–79 ..	..	..	..		Sale dropped.
11	1979–80 ..	..	..	..		Sale dropped as per Conservator of Forest's No. 7787/79, dated 12th April 1980. Divisional Forest Officer's No. 3496/79.
12	1980–81 ..	..	..	..		The sale of Avaram bark and Konnai bark 1980 and 1981 was dropped by Conservator of Forest's No. 7338/80, dated 30th June 1981.
13	1981–82	—	—	—	—	

382. *Elandai in Maharajapuram.*—In Maharajapuram Reserve Land of Sirkali Range Zizpytus mauritiana trees occur over an area of 1.6 ha. for which there is a keen demand and it has fetched an average of Rs. 981 during the current plan period as against Rs. 450 fetched during the previous plan period as against Rs. 345 fetched during the previous plan period. As statistics show there is an ascending trend of demand more Elandai (Zizyptus mauritiana) may be planted.

383. List showing the revenue realised from Maharajapuram Minor Forest Produce Unit is urnished below :—

STATEMENT SHOWING THE YIELD AND REVENUE REALISED FROM DIFFERENT ITEMS OF M.F.P. FROM 1970—71 TO 1982—83.

Maharajapuram Elandai Uni

	1969—70		1970—71		1971—72		1972—73		1973—74	
	Yield	*Revenue*	*Yield*	*Revenue.*	*Yield.*	*Revenue.*	*Yield.*	*Revenue.*	*Yield.*	*Revenue.*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	Kg.	Rs. P.	Kg.	Rs. P.	Kg.	Rs. P.	Kg.	Rs. P.	Kg.	Rs. P.
1 Elandai	1,054	461.00	1,781.00	462.00	1,933	465.00	1,431	1 681.88	1,873	680·00
2 Palmyrah	12,000	250.00	..	..	25,500	460.00	..	..	..	.
3 Dry manure	..	..	..	..	14 H/L	..	..	..	..	.
4 Coconut	80 Nos.	70.00	370.00 fruits.	60.00	170 Nos.	65.00	..	..	..	..
5 Coconut leaves	90 Nos.	..								
6 Eachan	..	..	..	..	..	..	250	1,125.00	65	72.00
7 Pagal fruits		..	..	..	..	..	..	..	..	..
8 Avaram bark	3,000 Kgs. and H / 1	342.00	..	194.00	..	..	..	..	..	..
9 Shells			..	..	..	..	..	..	..	.
10 Cow dung and Kodukkapuli	31/C/L and 58/L.	160.00	..	..	..	..	..	..	..	..
11 Brush wood	..	..	..	..	..	..	..	..	..	..
12 Alhoc fibre	..	..	..	..	..	..	..	..	..	..
13 31 and 32 items MFP except Palmyrah and coconut	..	..	..	..	..	105.00	..	..	..	300.00

STATEMENT SHOWING THE YIELD AND REVENUE REALISED FROM DIFFERENT ITEMS OF M.F.P. FROM 1970–71 TO 1982—83—*cont.*

Maharajpuram Elandai Unit—cont.

	1974—75		1975—76		1976—77		1977—78		1978—79	
	Yield.	*Revenue.*	*Yield.*	*Revenue.*	*Yield.*	*Revenue.*	*Yield.*	*Revenue.*	*Yield.*	*Revenue.*
	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
	Kg.	Rs. P.	Kg.	Rs. P.	Kg,	Rs. P.	Kg.	Rs. P.	Kg.	Rs. P.
1 Elandai	740	717.00	1,491	535.00	1,049	5,867.00	1,655	615.00	843	535.00
2 Palmyrah	..	..	..	..	..	..	..	..	..	..
3 Dry manure	..	..	..	..	..	..	..	..	..	..
4 Coconut	..	..	..	..	..	..	..	63.00	58 Nos.	63.00
5 Coconut leaves	..	..	..	..	..	..	..	..	..	.
6 Eachan	402	90 per cent	..	..	..	..	..	..	..	..
7 Pagal fruits	..	..	..	..	..	..	..	..	..	..
8 Avaram bark	..	300.00	..	..	..	..	..	..	..	..
9 Shells	2565 Kgs. of Lime stone	..	..	..	..	..	..	..	..	..
10 Cow dung and Kodukkapuli	..	..	..	..	..	..	..	..	..	..
11 Brush wood	..	..	..	..	..	..	..	..	..	..
12 Alhoc fibre	..	..	..	..	..	..	..	..	..	..
13 31 and 32 items MFP except Palymyrah and coconut	..	300.00	..	300.00	..	350.00	..	1,450.00	..	1,290.00

STATEMENT SHOWING THE YIELD AND REVENUE REALISED FROM DIFFERENT ITEMS OF M.F.P. FROM 1970-71 TO 1982-83—*cont.*

Maharajapuram Elandai Unit.

	1979—80		1980—81		1981—82		1982-83	
	Yield.	*Revenue.*	*Yield.*	*Revenue.*	*Yield.*	*Revenue.*	*Yield.*	*Revenue.*
	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)
		Rs. P.	Kg.	Rs. P.		P. Rs.	Kg.	Rs. P.
1 Elandai	..	605.00	1,500	650.00	..	2,200.00	..	20.00
2 Palmyrah	..	..	1183 Kg.	45.00	..	..	..	..
3 Dry manure..	..	..	..	..	..	..	..	..
4 Coconut	..	..	..	..	..	..	..	..
5 Coconut leaves	..	85.00	..	65.00	..	95.00	..	..
6 Eachan	..	..	..	..	..	..	..	..
7 Pagal fruits	..	..	..	..	..	..	..	..
8 Avaram bark	..	..	..	..	..	..	..	..
9 Shells..	..	..	..	..	..	..	..	..
10 Cow dung and Kodukkapuli	..	..	..	..	..	..	..	..
11 Brush wood	..	..	..	..	..	..	..	..
12 Alhoc fibre	..	..	..	..	..	..	..	..
13 31 and 32 items MFP except palmyrah and coconut	..	1,154.00	1,000 kgs.	1,080.00	..	..	..	..

384. REVENUE VALID FROM MINOR FOREST PRODUCE UNITS IN THANJAVUR DIVISION FROM 1970—71 TO 1981—82.

Serial number and Least year.		*Name of the items.*	*Name of the area.*	*Revenue.*	*Yield.*	*Remarks*
(1)		(2)	(3)	(4)	(5)	(5)
1	1971-72 ..	32 items of M.F.P. Except Palmyrah and coconut in Manamelgudi.	Manamelkudi M.F.P. unit and Udayamarthandapuram of Thanjavur Division.	105.00	..	..
2	1973-74 ..	31 items of M.F.P. in Thanjavur Division.	All Reserved Forests, Reserve Lands except in Koliakadu Maharajapuram Reserve Land Elandai Unit.	1300.00	..	..
3	1974-75 ..	32 items of M.F.P. ..	Thanjavur Forest Division	300.00	2,540 kgs. of Kilingel (Lime slake).	..
4	1975-76 ..	Do.	Do.	350.00	..	..
5	1976-77 ..	Do.	Do.	1,105.00	..	..
6	1977-78 ..	Do.	Do.	1,450.00	..	..
7	1978-79 ..	Do.	Do.	1,290.00	..	..
8	1979-80 ..	Do.	Do.	1,154.00	..	..
9	1980-81 ..	Do.	Do.	1,080.00	..	..

MISCELLANEOUS REGULATIONS.

Section I—Grazing.

385. Grazing has been permitted in all the Reserved Forests and Reserve lands except in areas which were closed from time to time for valid reasons.

386. One of the objects of management of various working circles are to limit the grazing incidence to the extent which the Reserved For ests can sustain. But the grazing incidence has risen steeply during 1975-76 to 5.6. Again it has gone to the peak 6.9 during 1981-82.

387. A Statement showing the Revenue realised annually is furnished below :—

The revenue realised by sale of grazing permit is as follows :

Serial number.	*Year.*	*Amount.*
(1)	(2)	(3)
		RS.
1	1970	2,405.00
2	1971	4,321.00
3	1972	4,037.00
4	1973	3,559.00
5	1974	1,805.50
6	1975	2,705.00
7	1976	1,319.00
8	1977	1,265.00
9	1978	1,943.00
10	1979	1,642.00
11	1980	1,922.00
12	1981	4,986.00

388. A Statement showing the Grazing revenue realised and the grazing incidence for Tanjore Division is furnished in the Appendix IX.

389. *Section* 2.—Farm Forestry. The object of farm forestry is to create compact Forests in the village porambokes and tank-beds in order to increase the resources of fuel small timber, fodder green manure leaf with a view to meet the demands of the local public. This scheme provides employment to the local public and they are paid in the form of wages with the broad outlook of catering all the benefits of both direct and indirect, natural forests at their vicinity farm forestry was started in Tanjore District in the year 1966, under the Third Five-Year Plan.

390. *Choice of species.*—The main species preferred was babul (Acacia nitolica) which is suitable for all purposes such as small timber, fire-wood pulpwood (utilised in Seshasayee Paper and Boards Limited, Pallipalayam for Pulp) making agricultural implement, fodder, fencing material, etc. The other species planted under this scheme are Eucalyptus tereticornis, Casuarina equisetifolia, in small quantities.

391. *Plantation.*—Commencing from 1966, with a staff pattern of one Range Officer and Five Foresters. They have raised from 1966 to 1980 3,173.90 ha. of (Acacia nilotica) babul 160.60 (Eucalyptus tereticornis) Eucalyptus hybrid 42.00 ha. Casuarina equisetifolia and 1,185.[illegible] ha. Anacaridum Occidentale).

391. (*a*) List of plantation handed over to Tiruchi Extension Division, Arantangi Range.

Serial number.	*Year of plantation.*	*Name of Plantation.*	*Area in Ha.*	*Species Remarks.*
(1)	(2)	(3)	(4)	(5)
1	1966	Karavidaicheri	40	Babul.
2	1967	Alappiranthan	40	Do.
3	1967	Vilanar	40	Do.
4	1968	Alappiranthan	40	Do.
5	1968	Narpavalakudi	40	Do.
6	1969	Ponpethi	40	Do.
7	1969	Edayar	40	Do.
8	1970	Edayar	25.50	Do.
9	1970	Puvalur	40	Do.
10	1970	Ponpethi	40	Do.
11	1971	Ponpethi	70.50	Do.
12	1971	Puvalur	130.50	Do.
13	1971	Narpavalakudi	40.00	Do.
14	1972	Thiruppavinpal	60.00	Do.
15	1972	Kunnakurumbai	14.60	Do.
16	1972	Edayar	25.50	Do.
17	1972	Vilanar	128.50	Do.
18	1972	Ponpethi	8.00	Do.
19	1972	Thiyathur	42.50	Do.
20	1973	Thiyathur	50.00	Do.

Serial number.	Year of plantation.	Name of Plantation.	Area in Hactare.	Species. Remarks.
(1)	(2)	(3)	(4)	(5)
21	1973	Piranthini and Karuppur	60.00	Babul.
22	1973	Pungudi	50.00	Do.
23	1973	Rathinakottai	50.00	Do.
24	1974	Thalanur and Manur	40.00	Do.
25	1974	Aminji and Thedakki	40.00	Do.
26	1974	Vilimangalam	39.10	Do.
27	1974	Vanganagaram	18.00	Do.
28	1974	Eagivayal	5.40	Do.
29	1974	Keeranur	40.00	Do.
30	1975	Karkamalam	39.00	Do.
31	1975	Manamelkudi	40.00	Do.
32	1975	Seyyanam	40.00	Do.
33	1975	Nanakkudi	40.00	Do.
34	1975	Allarai	38.00	Do.
35	1976	Panayavayal	40.00	Do.
36	1976	Panayavayal	40.00	Eucalyptus hybrid.
37	1976	Avudayarkoil	90.00	Babul.
38	1978	Seyyanam	40 00	Do
39	1976	Adambur	40.00	Do.
40	1976	Ollanur	40.00	Do.
41	1976	Karkamalam	40.00	Do.
42	1977	Karkamalam	20.00	Do.
43	1977	Siruvayal	72.00	Do.
44	1977	Kudalur	60.00	Do.
45	1977	Somanivayal	29.00	Do.
46	1977	Seyyanam	40.00	Do.
47	1977	Pilivalasai	20.00	Do.
48	1978	Thanthani	40.00	Do.
49	1977	Kurumbur	20.00	Do.
50	1977	Poyyavayal	18.00	Do.
51	1977	Kadayathupatti	31.00	Do.
52	1977	Mukkudi	40.00	Do.
53	1978	Pavathakudi	45.00	Do.

Serial nnmber.	*Year of Plantation.*	*Name of Plantation.*	*Area in Hectare.*	*Species Remarks.*
(1)	(2)	(3)	(4)	(5)
54	1978	Narpavalakudi	40.00	E. H. Failure re-planted with Babul and Ko Velan.
55	1978	Narpavalakudi Bit III	10.00	Do.
56	1978	Pudukottai	60.00	Do.
57	1978	Alathur	40.00	Do.
58	1978	Kandadu	30.00	Do.
59	1978	N. Kudalur	50.00	Do.
60	1978	Poyyanur	40.00	Do.
61	1978	Vichur.	65.00	Babul.
62	1978	Gunavathimangalam	40.00	Do.
63	1978	Edaythimangalam	60.00	Do.
64	1979	Vilimar	46.10	Do.
65	1979	Viliyathur	38.30	Do.
66	1979	Velvarai	42.70	Do.
67	1979	Kanadu	42.00	Do.
68	1979	Kulathur	50.30	Do.
69	1979	Pachalur	38.10	Do.
70	1979	Avanthakuttai	21.06	E.H.
71	1979	Kattukarai	90.00	Babul.
72	1979	Kuduvaiyur	52.30	Do.
73	1980	Thirunarayanamangathan	32.00	Do.
74	1980	Sikknenthal	32.00	Do.
75	1980	Alinjiarthal	27.00	Do.
76	1980	Silathur	48.00	Do.
77	1980	Annakulam	20.00	Do.
78	1980	Perumaruthur	52.50	Do.
79	1980	Thathari	28.00	Do.
80	1980	Kanakulam	8.00	Do.
81	1980	Vilimar	20.00	Casuarina.
82	1980	Mimisal	14.00	Do.
83	1980	Kuluvanar	8.00	Do.

ABSTRACT.

	Hectares.
Babul Plantation	3,173.90
Eucalyptus hybrid	160.60
Casuarina equisetic	42.00
Total	3,376.50

391. (*b*) *Cashew Plantations.*—Particulars of Cashew plantations raised in Aranthangi Range and handed over to Tiruchi Extension Division are furnished below :—

Serial number.	*Name and year of Plantation.*	*Area in hectare.*	*Remarks.*
(1)	(2)	(3)	(4)
1	1970 Narpavalakudi	40.00	
2	1971 Do.	42.00	
3	1976 Silambavayal	20.00	
4	1976 Aliyanilai	40.00	
5	1977 Pilluvalasai	20.00	
6	1977 Kurumbur	20.00	
7	1977 Aliyanilai	11.00	
8	1978 Kandadu	28.00	
9	1978 Pilluvalasai	18.00	
10	1978 Poovathakudi	30.00	
	Total ..	269.00	

Section 4—*Wild Life*—*Point Calimere Wild Life Sanctuary* :—

392. A separate management plan has been drawn by Thiru V. Ganesan, Wild Life Warden and incorporated in this Plan as per Chief Conservator of Forest's D.Dis. T1/79186/81-82, dated 18th May 1982 *vide* Appendix No. XXI.

393. *Reservation of Wild Life.*—With reference to G.O. Ms. No. 1684, Forest and Fisheries, dated 26th December 1980 as per Chief Conservator of Forest's No. Y1/14649/81-1, dated 17th February 1981 the Point Calimere Sanctuary Functioning under the control of Wild Life Warden, Madras was transferred to the District Forest Officer, Thanjavur with effect from 1st April 1981 and continued to be under this control.

394. *Scheme for Nature Conservation.*—The species of Sea turtles have become endangered and it has been included in Schedule I of the Wild Life Protection Act 1972.In order to conserve this species it was considered to collect the eggs, hatch them partificially and then release them into the sea. Therefore three hatcheries were formed at Kodiakarai, Vanavan mahadevi and, Arcot thurai in Thanjavur Division 30.095 sea turtle eggs were collected out of which 17,536 eggs hatched and released into the sea ; as per G.O. Ms. No. 1451, Forest and Fisheries department dated 1st November 1982 communicated Chief Conservator of Forest's No. K3/93846/82-4, dated 6th November 1982.

395. Particulars of eggs collected and hatchings of sea turtle released during 1982-83.

Serial number.	*Name of the hatchery.*	*Total number of eggs collected.*	*Number of eggs hatched.*	*Number of hatchling released int the sea.*
(1)	(2)	(3)	(4)	(5)
1	Kodiakarai	10,695	7,775	7,775
2	Arcot Thurai	8,683	2,618	2,618
3	Vanavan mahadevi	10,717	7,443	7,143
	Total ..	30,095	17,536	17,536

Section 5—Bamboo planting :

396. There is a prescription for planting 6 hectare in Vellar Padugai near Ayupettai. But in Vellar Padugai 10 hectare have been raised during 1981 which has been identified and proposed for handing over to Cuddalore Division as appended in the list of plantations to be handed over to the ir division.

Section 6 :

397. Maintenance of Miscellenous. Plantations at Gopala samuthiram of Sirkali Range Miscellenous Plantations have been raised as furnished in the statement.

List of Eucalyptus (*E.H.*) *plantation raised in Sirkali Range Thanjavur Forest Division from* 1970--1982.

Serial number and year of plantation.		*Name of the plantation.*	*Area in ha.*	*Percentage of the plantation.*	*Location* RB	LB	*Remarks.*
(1)		(2)	(3)	(4)	(5)		(6)
1	1967/1975	Gopalasamudram	17.80	Coleroon right brank coleroon bridge west side.			1967/1975 coppice handed over to TAFCORN Virudhachalam Range.
2	1977	.. Do.	7.00	Coleroon right bank west to 17.80 E.H. and east to 1976 CRA.			Original planted 7 ha. under Sirkali Range.
3	1976	.. Odaiyar	15.00	Both Bank			It is interplanted in 1976 Teak plantations.
4	1976	.. Nandodiayrar	5.00	Both Banks			Do.
5	1979	.. Gopalasamudram	1.5	Coleroon right Bank and two bits planted. Collidam crossing bus bridge plants in both side.			....

398. *Salimangalam Eucalyptus hybrid plantation.*—Prescription has been made to plant bamboo after felling Eucalyptus in that area. But nothing has been done in that time.

399. *Dibbling Palmyrah seeds on the periphery.*—It was suggested to dibble palmyrah seeds along the boundary of the forest blocks and complete it in a systematic manner in a period of five years. Commencing from 1972 but nothing has been done.

Section 8 :

400. Occurance of fire is a rare phonenomenon in this division. There were traces of stray fire occurance in the plantations in which only the dried leaves and wind fallen twigs were burnt. There were no damage to the crop worth mentioning.

Section 9—Roads and Buildings :

401. There are forest roads in this division in all there are six residential quarters in this division two in Thuraikadu, one in Keeramangalam two at Kodiakadu and one at Agasthiampalli Besides this there are two non residential buildings, viz., Point Calimere Rest House and 'Poonarai Illam' which is transferred to P.W.D., for maintenance.

402. The details of buildings are furnished in the statement.

The following residential buildings were constructed and particulars of cost year of construction, etc., are furnished below :—

Serial number and name of the building. (1)	*Locality.* (2)	*Year of construction.* (3)	*Cost of construction.* (4)	*Remarks.* (5)
			RS. P.	
1 One combined quarters for Forest guard and watcher for Muthupet beat staff.	Thuaikadu	1961-62	7,078.82	....
2 One combined quarters for Forest guard and watcher for chatram beat staff.	Do.	1963-64	7,100.60	....
3 One combined quarters for forests guard and watcher.	Keeramangalam	1963-64 1964-65	8,701.64	Transferred to TAFCORN, Pudukkottai.
Constructed by the State Wild Life Unit—				
1 Forester's quarters ..	Kodiakadu	1969-70	11,487.00	All Electrified.
2 Combined quarters for forest guard and watcher.	Do.	1969-70	16,037.25	Do.
3 Chouki gate building ..	Agasthiampalli	1969-70	5,117.05	Do.

The following new buildings were constructed and particulars of cost of year of construction, etc., are furnished below :—

Serial number and name of the building. (1)	*Locality.* (2)	*Year of construction.* (3)	*Cost of construction.* (4)	*Remarks.* (5)
			RS. P.	
1 One semi permanent shed at Thenperambur for mulbery rearing shed.	Thenperambur	1978-79	11,647.00	....
2 Point Calimere Rest House	Point calimere	1910	N.A.	....
3 Poonarai Calimere Resthouse	Do.	1974	N.A.	....
4 Forest Guards Quarters ..	Kodiakadu	..	..	....
5 Research scholars quarters 2 combined quarters.	Point Calimere	1981	68,006.24	....

403. *Expenditure on the maintenance.*

Serial number and name of the buildings.	1970–71.	1971–72.	1972–73.	1973–74.	1974–75.	1975–76.	1976–77.	1977–78.	1978–79.	1979–80.	1981–82.	1982P–83.	1983–84.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1 Forester's quarters, Kodikkadu.	50.00	45.00	..	..	..	..	..	..	..	..	..	..	..
2 Combined quarters for forest guard and watcher at Kodiakadu.	50.00	40.00	..	..	..	..	..	..	..	..	..	..	..
3 Combined quarters for forest guards and watchers at Thuraikadu.	50.00	34.00	..	..	..	..	..	..	..				
4 Combined quarters for forest guards and watchers at Thuraikadu (Chatram beat).	50.00	35.00	..	..	..	..	..	..	..				
5 Combined quarters for forest guard and watcher at Koeramangalam.	50.00	40.00	..	..	..								

404. *Wells—Improvement of well.*—There is a well near the staff quarters at Kodiakada and two wells in the Point Calimere Wild Life Sanctuary. Suggestions have been given in the current plan to bail out the water in the wells annually, all the rubbish found in the well will be removed ; and fresh sand will be added after removing the silt. Addition of pottasium permanganeate once in six months was also suggested. It is understood that nothing has been done in that line.

A list of wells and tanks in the Division given below :—

Serial number and location of the wells, tanks.	*Year of construction.*	*Cost of construction.*	*Maintenance of cost.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)
		RS. P.		
Wells—				
1 Near Forester's Quarters at Kodiakadu.	1941-42	214.00	Nil.	....
Tanks—				
2 Karuthanpallam Morasa-kulam.	Both situated in Neppugai reserved land.	..	Nil.	Handed over to TAFCORN
3 Point Calimere Game sanctuary two wells.	1981-82	5,000.00	Nil.	Cost of construction per well Rs. 2,500.00.
4 Check dam (3) three Point Calimere Game Sanctuary.	1981-82	7,800.00	Nil.	Cost of construction per check dam Rs. 2,600.00.

Section 10—*Boundaries, encroachments and reservation proceedings, etc.*

405. *Demarcation.*—The stone pillars planted along the boundary to demarcate the same invariably in all the blocks have not been serially numbered and white washed. This may be water done annually.

406. It is necessary to declare the new Korayar channel the lagoon and Vella voikkal which pass through Muthupet Reserve Forest as a right of way since many boats pass through this water-way.

407. *Survey and settlement.*—In G.O. Ms. No. 646, Forests and Fisheries, dated 20th July 1976. The Government have empowered Tahsildars to function as settlement officers with a view to expediting issue of notification under Forest Act. The work is being carried out and the forest department staff in co-operation with the Forest Settlement Officer. The progress in Tanjore Division is as follows :—

Number of Blocks notified under section 16 .. .. 3—821.95 ha.

Number of Blocks for which section 16 notification is to be finalised .. 13—1201.91 ha.

Section 11—*Machinery*:

408. There is a tractor in good condition, two jeeps and one Omni bus in use of this division. The Jeep MDE 4178 transferred from Tiruchirappalli is not worthy which may be disposed off.

A list of vehicles is furnished below :—

Statement showing the machineries in the Thanjavur Division:

Serial number.	*Registration number of the vehicle.*	*Make of the vehicle and horse power.*	*Date of purchase.*	*Price paid.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)	(6)
				RS. P.	
1	TNO 2418 ..	Tractor	17—11—1973	41,091.02	Good condition.
2	TNX 2883 ..	Mahendra and Mahendra 15.68	13—9—1983	25,000.00	Do.
3	TNO 6853 ..	Jeep 18.22 HP ..	23—7—1980	62,768.96	Do.
4	TNZ 1172 ..	LMV 1982 Omni Bus diesel.	21—4—1982	8,000.00	Do.
5	MDE 4178 ..	Jeep 15.83 HP ..	Transferred from Assistant C.F., Tiruchirappalli.	N.A.	Condemned not in use.

409. *Boats.*—There is sail boat at Muthupet for permabulating the Muthupet mangrove forests. In order to enable the departmental inspecting officials and protective staff to move easily and speedily mechanised boats may be acquired.

410. There are many fibre glass boats seized by the custom department and left to the vagaries of nature at Point Calimere. Government may be addressed and a boat may be got allotted exclusively for the Forest Department.

Territorial Changes.

Jurisdictional changes.

411. The Tamil Nadu Forest Plantation Corporation was formed as per G.O. Ms. No. 267, Forest and Fisheries Department, dated 3rd April 1974 communicated in Chief Conservator of Forest's Ref. No. 4342/73/J2, dated 29th April 1974. A large number of revenue yielding plantations have been leased out to the corporation. Particulars of plantations handed over to Tamil Nadu Forest Corporation is furnished in Appendix.

412. Miscellaneous and Eucalyptus Hybrid plantations raised in this Division were handed over, as the list furnished in the appendix to the Social Forestry Division, Pudukkottai as per G.O. Ms. No. 1307, Forests and Fisheries Department, dated 9th November 1981 communicated in Chief Conservator of Forest's No. 122047/81/Y3, dated 17th November 1983.

413. Statement showing the Revenue and Expenditure for Thanjavur Forest Division from 1971-72 to 1981-82.

Section 14—Past Revenue Expenditure.

Serial number.	*Year.*	*Revenue.*	*Expenditure.*		*Total expenditure.*	*Surplus or deficit (+).*	*Remarks.*
			Works.	*Establishment.*			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	1971–72	1,93,038.61	3,25,549.25	3,61,630.63	6,87,179.88	(—) 4,94,141.27	..
2	1972–73	81,411.00	3,57,132.00	2,87,589.00	7,44,721.00	(—) 6,63,310.00	..
3	1973–74	3,63,648.00	5,29,972.00	42,543.00	9,54,515.00	(—) 5,90,867.00	..
4	1974–75	1,81,749.00	7,65,262.00	3,58,471.00	11,23,733.00	(—) 9,41,984.00	..
5	1975–76	2,47,356.56	8,22,813.20	3,84,893.70	12,07,707.89	(—) 9,59,119.72	..
6	1976 77	2,70,244.00	7,91,386.52	4,37,977.20	12,29,363.72	(—) 12,12,960.68	..
7	1977–78	5,91,487.44	13,34,600.51	4,69,827.60	..	..	..
8	1978–79	24,16,745.69	16,34,246.85	4,84,295.81	1,84,448.11	(+) 29,82,203.03	..
9	1979–80	11,71,077.18	15,89,968.18	5,62,433.00	21,52,401.68	(—) 9,81,324.50	..
10	1980–81	8,81,1025.44	27,27,998.28	5,64,169.50	22,92,167.86	(—)14,11,142.42	..
11	1981–82	1,48,282.46	19,73,826.33	7,14,884.95	26,88,711.28	(—)25,40,328.82	..

414. Revenue and Expend

(a)

Budget head.	1970-71	1971-72	1972-73	1973-74	1974-75
(1)	(2)	(3)	(4)	(5)	(6)
113. *Forest (a) Sale of timber and other produce.—*					
1. 01. Sandalwood	..	..	..	..	..
2. 03. Firewood and charcoal	..	8.16	74.00	1,170.00	931.00
3. 05. Grazing	..	4,513.00	1,267.00	1,427.00	4,885.00
Minor Forest Produce–					
4. Other Minor Forest Produce	..	277.50	30,740.00	30,740.00	16,955.00
5. Bamboo	..	559.50	..	..	..
6. 08. Confiscated Forest produce	..	..			146.00
(b) Receipts from Forest plantation.—					
7. 01. Bamboo	..	..	..	..	2,947.00
8. 04. Cashew	..	..	..	..	34,645.00
9. 07. Teak	..	..	..	..	83,179.00
10. 09. Eucalyptus	..	..	..	..	..
Receipts from Farm Forestry—					
11. 01. Fines and foreitures	..	3,355.00	958.00	1,731.00	600.00
12. 02. Rent on building	..	1,519.00	1,254.00	798.00	657.00
13. 06. Miscellaneous	..	..	..	..	..
14. 07. Interest of arrears	..	..	..	..	..
15. Other sources receipts from development scheme and other receipts.	..	..	..	11,088.95	42,315.00
Timber and other produce removed from the purchaser—					
16. Firewood and charcoal	..	..	1,37,464.25	16,123.00	534.00
17. Grazing and fodder grass	..	..	3,328.00	2,760.00	1,607.00
18. Other Minor Produce drift and wilf wood and confiscated forest produce.	..	..	1,343.00	1,783.00	153.00
19. Receipts from the management of Ex. zamin forest.	..	31,387.00	2,888.00	3,014.00	..
20. Bamoo	..	1,94,998.61	2,882.00	..	..
21. Timber	..	1,961.00	..	..	..
22. Forest conservation and Dexelopment AB Renewals, repalment of stores, tools and plants.	..	..	..	..	..
23. Maintenance Conservancy and regeneratione.	..	..	21,268.00	905.00	..
24. 17. Maintenance 01. Regeneration	..	..	..	..	..
25. Maintenance of Boundaries	..	..	198.00	608.00	..
26. *Survey and demarcation AD Other items—*	..				
27. 26. Other charges			..	600.00	..
3 13· *Forest Produce—*					
28. 26 Other charges	..	..	..	1,374.00	..

TURE—

Revenue.

1975–76	1976–77	1977–78	1978–79	1979–80	1980–81	1981–82
(7)	(8)	(9)	(10)	(11)	(12)	(13)
..	..	..	..	..	..	..
8,755.65	2,862.28	2,080.00	3,388.00	1,129.00	1,194.40	2,141.00
18,138.00	5,461.00	1,053.00	..	0,195.00	7,164.00	410.00
2,705.00	1,319.00	1,265.00	1,943.00	1,642.00	1,087.00	5,986.00
3,406.00	1,911.35	1,568.12	2,495.00	..	..	..
..	.. ..	..	..	..	540.00	95.00
12,715.00	10,638.05	24,130.50	500.00	1,130.00	556.00	..
7,828.13	2,562.00	48,922.00	42,551.00	25,856.40	2,27,983.00	..
1,41,497.25	92,865.00	4,18,378.13	19,99,861.00	23,155.17	3,35,098.03	..
270.00	2,360.00	1,953.00	1,629.00	3,599.00	2,437.00	660
10,160.00	2,897.87	20,198.13	3,369.95	7,493.90	1,748.00	15
490.00	501.90	554.55	515.75	477.30	642.75	13
15,678.53	35,860.00	..	27,981.03	33,583.9	39,796.91	644
..	..	..	..	..	..	..
..	..	191.30	2,676.11	5,434.35	2,406.30	18.00
..	..	..	..	..	..	..
..	..	..	..	..	..	..
..	..	..	..	..	..	..
..	..	..		..	..	..
..	..	..	..	..	..	..
..	..	..	..	..	..	..
146.00	..	316.65	448.58	..	..	..
2,486.12	6,283.00	..	..	..	150.00	..
2,486.12	..	..	..	..	1,673.00	1,000.00
..	399.45	5,815.70	6,790.50	..	..	..
389.00	690.00	518.00	664.80	230.00	..	2,000.00
88.00	..	..	953.99	45.00	5,523.00	..
4,000.85	4,855.41	3,608.00	6,469.75	7,787.84	13,228.15	9,772.60

414. REVENUE AND
(a) *Revenue*—*cont*.

Budget Head. (1)	1970-71. (2)	1971-72. (3)	1972-73. (4)	1973-74. (5)	1974-75. (6)
Removal of F and C by Government Agency—					
29. Roads and buildings	..	..	..	..	..
30. Removal of grass and other MFP by Government.—Agency removal of bamboo by Government Agency.	..	..	18,518.00	2,561.00	..
31. Sandal wood	..	..	..	2,549.00	..
32. Rent, rates and taxes AF Timber and other produce by Consumers and purchasers.		..	304.00	185.00	..
33. Plantation scheme in the Seventh Five-Year Plan III, II State Plan JB. Scheme four into five tree planting Scheme in the fifth FYP III CD Schemes of raising shelter belt in coastal areas.	..	..	269.00	44.00	..
34. Pay D.A.		..	..	..	..
35. Other allowances		..	..	..	..
36. A. D. A.		..	..	..	..
37. T.A.	..	..	..	..	..
06 Miscellaneous.	..	..	..	..	..
07 Interest of arrears—					
Other sources receipts from development scheme and other receipts.	..	..	11,088.95	42,315.00	10,721.00
Timber and other produce removed from the purchaser.—					
Firewood and charcoal	..	..	1,37,464.25	16,123.00	534.00
Grazing and fodder grass	..	..	3,328.00	2,760.00	1,607.00
Other minor produce drift and firewood and confiscated forest produce.	..	..	1,343.00	1,702.00	153.00
Receipts from the management of ex-zamin forest.	..	..	31,387.00	2,888.00	3,014.00
Bamboos	..	..	1,94,998.61	2,882.00	..
Timber	..	..	1,960.00	..	..
		Total ..	1,93,038.61		
Forest conservation and Development/ AB. Renewals, replacement of stores/ Tools and Plants.	.	..	..	..	..
Maintenance conservancy and Regeneration.		..	..	21,268.00	905.00
17. Maintenance 01. Regeneration					
Maintenance of Boundaries .		..	..	198.00	608.00
Survey and demarcation–					
AD. Other items		..	..	..	600.00
26. Other charges .. .		..	..	..	..
313. Forest Produce		..	..	..	1,374.00
26. Other charges				..	..

EXPENDITURES—cont.

1975-76. (7)	1976-77. (8)	1977-78. (9)	1978-79. (10)	1979-80. (11)	1980-81. (12)	1981-82. (13)
4,719.50	9,989.10	1,31,016.75	..	712.00		..
..	15.00	..	10,032.50	780.00	..	..
..	184.00	..	..	369.00	184.80	184.80
..	11,506.95	6,337.48	2,878.45	1,925.65	..	..
.	..	..	4,575.00	14,271.45	..	..
	..	..	110.00	419.00	..	
	..	..	217.00	708.25	..	
..	..	..	240.00	2,194.85	..	..
..	..	..	140.00	..		
..	..	..			..	
15,678.53	35,860.00	..	27,981.03	33,583.9	39,796.91	64,456.61
..	..	191.30	2,767.11	5,434.35	2,406.30	18.10
..	..	..	..	..		..
..	..	..	..	..	..	
..	..		..	..	..	..
..	..	..	..	..		
..	..		..	..	..	..
2,47,856.56	2,70,244.00	59,15,867.43	24,16,487.43	24,167.45	8,89,008.94	1,48,282.46
146.00	..	316.65	448.58	..	..	
2,486.12	6,283.00	..	..	..	150.00	..
2,486.12	..	..	..	..	1,673.50	1,000.00
..	399.45	5,815.70	6,790.50	..		
24.00	330.50	..	40.00	..	..	628.50
..	..	50.00	..	..		
389.00	690.00	510.00	664.80	230.00	..	3,000.00
88.00		..	953.00	45.00	5,327.00	

(a) *Revenue*—cont.

Budget head.	1970-71.	1971-72.	1972-73.	1973-74.	1974-75.
(1)	(2)	(3)	(4)	(5)	(6)
	RS.	RS.	RS.	RS.	RS.
Removal of F and C by Government Agency.	..	..	..	..	..
Roads and buildings—removal of grass and other MFP by Government Agency removal of bamboo by Government Agency.	..	..	..	18,518.00	2,561.00
Sandal wood	..	..	..	..	2,549.00
Rent, rates and taxes AF Timber and other Produce by Consumers and purchases.	..	..	..	304.00	185.00
Plantation scheme in Vth Five-Year Plan II, State Plan JB. Scheme four into five tree planting.	..	..	..	269.00	44.00
Scheme in the Vth Five-Year Plan III, CD Schemes of raising shelter belt in coastal areas.	..	..	..	..	..
Pay, DA	..	..	..	..	..
Other allowances	..	..	..	..	..
ADA	..	..	..	..	..
T.A.	..	..	..	..	..
Direction and Administration AD District Establishment—					
1. Pay	2,59,745.55	2,60,969.00	27,870.00	2,36,917.00	..
2. D.A.	23,656.75	35,692.00	56,479.00	50,900.00	..
3. Dearness Allowance	..	..	..	10,121.00	..
4. Additional D.A.	..	..	..	1,747.00	..
5. Medical Allowance	..	1,022.00	808.00	1,223.00	..
6. Other allowances	7,520.61	7,830.00	11,121.00	1,085.00	..
7. Travelling allowance ..	34,809.10	42,270.00	35,200.00	33,620.00	..
8. Office expenses	..	..	..	19,035.00	..
9. Pay contingencies	16,801.27	19,466.00	20,286.00	..	..
10. Motor Vehicle purchase ..	14,432.26	17,743.00	16,208.00	23,495.00	..
III Contingent Fund Plantations Scheme I. Non-Plan AD plantation along RCLT.					
11. Pay	..	..	..	..	..
12. D.A.	..	..	..	..	..
13. Dearness Pay	..	..	..	..	..
14. Additional D.A.	..	..	..	..	..
15. Other allowance	..	..	..	..	..
16. Travelling allowance ..	..	..	..	..	..
Plantations scheme in Vth Five-Year Plan—II State Plan JB Scheme for raising R LF.	..	..	..	..	..
Pay	..	..	..	..	..
D. A.	..	..	..	..	..
Addl. D.A.	..	..	..	..	..
Other Allowance	..	..	..	..	..
Travelling Allowance	..	..	..	..	..

EXPENDITURE—cont.

1975-76. (7) RS.	1976-77. (8) RS	1977-78. (9) RS.	1978-79. (10) RS.	1979-80. (11) RS	1980-81. (12) RS.	1981-82. (13) Rs.
4,000.85	4,855.41	3,608.00	6,469.75	7,787.84	13,228.15	9,772.65
4,719.50	9,989.10	1,31,016.75	..	712.00	..	..
..	15.00	..	10,032.50	780.00	..	..
..	184.80	..	..	369.00	184.80	184.80
	11,506.95	6,337.48	2,878.45	1,925.65	..	..
	..	..	3,575.00	14,271.45	..	..
..	..	..	110.00	419.00	..	..
..	..	..	217.00	708.05	..	..
..	..	..	230.00	2,194.85	..	..
..	..	..	140.00	..		..
2,33,147.01	2,55,366.10	2,69,528.00	3,94,517.96	4,36,948.78	43,789.93	4,77,375.00
50,900.00	63,988.67	64,404.40	..	16,977.97	53,33,210.	1,12,602.00
31,440.90	50,679.59	63,683.85	..	..	..	..
1,202.00	341.70	216.50	230.30	50.45	216.75	73.90
9,982.15	11,550.04	23,290.80	36,427.55	21,766.40	18,865.70	23,372.00
34,210.00	35,785.45	38,100.45	34,979.10	49,982.65	50,097.20	62,823.00
20,594.73	21,002.11	37,419.62	28,521.56	38,436.94	31,845.40	54,457.90
35.00	..	..	..	61,600.00	32,450.49	..
14,973.70	15,934.47	14,031.49	8,294.41	12,946.31	31,378.36	15,506.90
..	10,967.76	30,354.39	17,530.41	12,745.23	4,497.98	23,644.00
9,033.00	8,750.00	6,440.00	9,487.00	5,052.50	2,680.00	..
1,965.35	1,880.00	1,375.00	..	21,100	288.00	
1,167.20	1,735.00	1,625.00	..	..	..	..
..	..	..	..	..	..	..
328.80	221.00	330.00	646.50	39.65	..	..
434.65	412.75	500.00	532.00	203.25	..	..
..	..	..	..	22,254.77	..	..
..	..	8,00,000.00	..	..	..	..
5,103.11	..	..	..	..	..	..
2,662.30	3,136.35	..	..	..	..	..
865.80	1,004.20	..	..		..	..
296.45	738.20	..	..	..	..	..

Budget head.	1970–71	1971–72	1972–73	1973–74	1974–75
(1)	(2)	(3)	(4)	(5)	(6)
Plantation Non-Plan Farm Forestry Minor works capital outlay on forest, forest conservation and Development scheme in Vth Five Year Plan II State Plan JB Expenditure of Forestry Plantation.	..	..	..	..	..
Plantation II State Plan I-A. Village Forest B Major works.	..	..	..	91,784.00	..
IF R.C.L.F.	..	..	..	5,07,884.00	..
J.F. Do.	..	..	..	1,01,656.00	..
Raising fuel trees Cashew Plantation/ coft wood plantation pulpwood plantation.	..	..	..		..
Other expenditure	..	..	..	..	..
Consolidation of forests.	..	..	..	..	..
JD. Drought Relief	..	..	..	..	..
Centrally sponsored scheme raising shelter belt in coastel rears.	..	..	..	..	..
Plantation schem r in Vth five year plan JB scheme for RCLF.	..	..	..	..	..
J.L. Scheme for intensive tree planting	..		..	..	..
Removal of Timber by Govt. Agency	..	..	..	..	..
Cashew Planting	..	..	..	..	..
Other fiscal services	..	..	..	..	..
AA Farm Forestry	..	..	..	..	..
513 (A) Capital Outlay on forests ..	..	..	..	..	..
513 (c) Do.	..	..	..	..	..
III C.S. scheme, Shelte belt in coastel areas.	..	..	..	..	..
Advances special advances	..	..	..	..	..
(a) Communication of Non Plan ..	..	..	..	..	..
(b) Plantation scheme Non-plan AC Cashew plantatic n.	..	..	..	..	1,349.00
Pay	..	..	..	..	275.00
D.A.	..	..	..	..	..
Addl. D.A.	..	..	..	..	..
Other allowance	..	..	..	43.00	..
T.A.	..	..	..	..	..
Medical charge	..	..	..	..	..
c) 247 Other fiscal services Promotion of small savings Ad Publicity 04 Publicity.	..	..	..	..	..

EXPENDITURE—cont.
ture.

1975–76	1976–77	1977–78	1978–79	1979–80	1980–81	1981–82
(7)	(8)	(9)	(10)	(11)	(12)	(13)
157.40	191.60	..	..	..	..	..
991.55	2,196.55	..	..	..	..	..
147.00	..	..	..	..	..	..
449.90	..	..	..	..	..	..
..	..	..	..	..	..	..
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..	..	..	..	..	..	..
12,07,707.89	..	12,29,663.72	18,04,448.11	21,18,542.66	21,52,401.68	..
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Budget Head.	Expenditure. 1970–71	1971–72	1972–73	1973–74	1974–75
(1)	(2)	(3)	(4)	(5)	(6)
70 (b) Conservancy and works.	..	..	..	..	..
Firewood and Chaorocal	50.00	375.00	..	..	..
Bamboos	273.00	..	..	..	..
Grass and other minor produce	410.76	16,940.00	..	..	.
70 (b) Timber	328.50	154.00	..	..	..
D2 Buildings.	196.00	..	..	..	..
Rent and Taxes	406.30	..	..	..	..
E (1) Regeneration	5,539.47	36,989.00	..	..	..
E (3) Maintenance of boundaries	17.50	..	..	..	..
J. Other charges Miscellaneous	14.20	500.00	..	..	..
	7,235.73				
Expenditure adopting metric system		214.00	..	..	..
Rent and Taxes	..	232.00	..	..	.
70 (e) Development schemes F. Plantation along river canal and lake frige forests cost of personal salaries.	5,970.00	6,547.00	2,220.00	..	.
Allowances—					
Dearness allowances	260.00	648.00	1,254.00	..	.
Travelling allowances	246.90	240.00	194.00	..	.
Other allowances	156.00	224.00	477.00	..	
	6,733.65	7,659.00	10,145.00	..	
Scheme of cashew cultivation in Forest areas centrally sponsored scheme.	..	..	..	..	
Cost of personal salaries	10,741.15	10,876.00	10,210.00		..
Dearness allowance	831.00	1,181.00	1,621.00	..	.
Travelling allowance	651.10	442.00	242.00	..	.
Other allowance	136.50	198.00	251.00	..	..
Office contingency	..	..	..	..	..
Maintenance of Motor vehicle	12,913.32	8,444.00	2,250.00	..	..
	25,273.27	21,144.00	14,584.00	..	..
119 (a) Organisation I provement and Extension of Forests:	..	..	..	..	..
1 Scheme for Farm forestry	3,660.00	..	..	..	..
Total	3,660.00	..	..	..	..

EXPENDITURE—*cont.*

Expenditure—cont.

1975–76	1976–77	1977–78	1978–79	1979–80	1980–81	1981-82
(7)	(8)	(9)	(10)	(11)	(12)	(13)
..	..	..	..	..	..	..
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EXPENDITMBE—cont.

Expenditure.

Budget heods. (1)	1970-71 (2)	b97b-72 [1971-72] (3)	1972-73 (4)	1973-74 (5	1974-75 (6)
119 (d) Development scheme of IV Five-Year Plan.	...	..	..	..	..
(1) Scheme for village forests	..	34,191.61	47,830.00	53,345'00	..
4. Scheme for casuarina	..	33,045.52	52,676.00	58,894.00	..
(6) Plantation along river canal, and lake frige.		1,57,542.79	1,71,604.00	2,40,945.00	..
(ii) Scheme for quick growing species	..	20.00	..	..	..
Construction of buildings	..	..	138.00	28,274.00	JB construction of Building 12,582.
B. Centrally sponsored scheme cashew cultivation					
(a) Scheme for cashew cultivation in Forest areas.	..	25,405.20	..	63,436.00	..
8. Scheme for expansion of cashew areas.	..	37,108.57	..	23,008.00	..
119 Capital outlay of Forest— (A) organisation improvement experimental of forests.	..		3,368.00	3,055.00	..
Farm forestry	..	..	..	..	..
	..	6,82,179.88	7,44,721.00	9,54,515.00	11,23,733.00
	..	..	..	..	..
	..	..	..	..	..
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	..	..	..	..	..
	..	..	..	..	..
	..	..	:	..	..
	..	..	..	..	..
Forest conservation and Development.—I. Non Plan..	..	..	..	..	..
Upkeep of departmental animals ..	..	..	..	..	..
03 Maintenance of boundaries	..	..	..	..	..
AF Panchayat Forest managed by Government.	..	..	..	..	..
01 Minor work		..	..	..	..
313 JY Sida aided Social forestry..					
Pay	..	..	..	..	..
Dearness allowance	..	..		..	..
Other allowances	..	..	..	..	..
Travelling allowances	..	..	..	..	..
AG. Softwood plantation —					
01. Salaries	..	..	..	..	..
Pay	..	..	..	..	..
Dearness allowances	..	..	..	..	..
Other Allowance	..	..	..	..	..
Travel expenses	..	..	..	..	..
	..	..	..	..	..

EXPENDITURE—*cont'*

Exhenditure.

1973–76 (7)	1976-77. (8)	1977-78. (8)	1978-79. (10)	1979-80. (11)	1980-81. (12)	1981-82. (13)
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..	..	..	..	..	..	17,472.81
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..	..	..	..	..	..	..
..	..	..	..	..	..	..
..	..	..	..	..	..	..
..	..	..	..	..	..	84.90
..	..	..	..	..	..	10,393.85
..	..	..	..	..	..	2.435.00
..	..	..	..	..	..	234,.00
..	..	..	..	..	..	747.40
..	..	..	..	..	..	4,400.00
..	..	..	..	..	..	1,050.00
.			..	..	..	160.00
..	..	..	..	..	..	735·00
..	..	..	..	..	..	74,104.16
..	..	..	..	..	..	2,59,363.35
..	..	..	..	..	..	3,330.00
..	..	..	..	..	..	732.00
..	..	..	..	..	..	225.00
..	..	..	..	..	..	150.00
..	..	..	..	17,740.25	..	15,045.60
..	..	..	..	..	..	20,643.93
..	..	..	..	..	7,888.21	..
..	..	..	..	..	1,27,652.93	..
..	..	..	..	..	..	..
..	..	..	..	..	..	..
..	..	..	..	..	..	..
..	..	..	..	..	22,92,167.86	26,88,711.28

CHAPTER VI.

STATISTICS OF GROWTH AND YELD.

Section 1—Statistics Relating to Teak.

415. In order to ascertain the rate of growth of Teak, measurements of girth at breast height over bark and height in different avenue as well as the compact plantations of all the ranges of Thanjavur Division were carried out by 10 per cent random enumerations. The average girth and height for all the plantations were calculated arithmetically and the results are tabulated below :—

Average Girth over Bark at Breast Height and Height of teak Avenue.

		I		II		III	
Serial number.	*Year of Plantation.*	*Girth in C.M.*	*Height in metre.*	*Girth in C.M.*	*Height in metre.*	*Girth in C.M.*	*Height in metre.*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	1971-72	52	9.25	60	6.75	84	12.00
2	1972-73	50	9.00	58	7.50	80	11.75
3	1973-74	47	8.70	55	7.30	77	11.50
4	1974-75	43	8.20	50	6.80	70	11.00
5	1975-76	48	6.00	42	5.70	46	10.00
6	1976-77	34	4.75	40	4.75	44	6.50
7	1977-78	32	4.50	38	5.50	42	6.25
8	1978-79	30	4.25	36	4.00	40	6.00
9	1979-80	25	3.75	20	3.00	22	3.75
10	1980-81	30	2.75	18	2.03	21	2.20
11	1981-82	10	1.00	8	1.00	6	0.50

Girth in CM.	*Height in metres.*	*Girth in CM.*	*Height in metre.*	*Total Girth in CM.*	*Height in metre.*	*Average Girth in*	*Height in metre.*
(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
71	7.20	70	7.50	3.37	43.10	67.4	87 74
70	7.00	68	7,25	3.26	42.50	65.2	8.50
68	6.75	65	7.00	3.32	41.25	66.4	8.25
58	6.00	55	6.00	2.76	38.00	55.2	7.60
47	5.75	45	5.75	2.18	33.20	43.6	6.64
45	5.50	44	5.50	2.07	27.25	41.16	5.43
44	5.25	42	5.25	1.98	25.75	39.6	5,15
22	4.00	30	4.25	1.56	22.50	31.2	4.50
16	3.00	16	3.00	9.9	16.50	19.8	3,30
11	2.00	14	2.30	79	11.23	15.28	2.26
8	1.00	7	1.00	39	4.50	7.8	0.90

416. An age girth curve and age height curve were drawn based on the data collected. The data represent only a general average for the plantations now in existence without any destruction of site qualities.

417. The site quality does not express itself quite early in the life of plantation. The present rate of growth indicate that most of the plantations will correspond to class IV of all India quality. ..

Section 2.—Statistics relating to Casuarina.

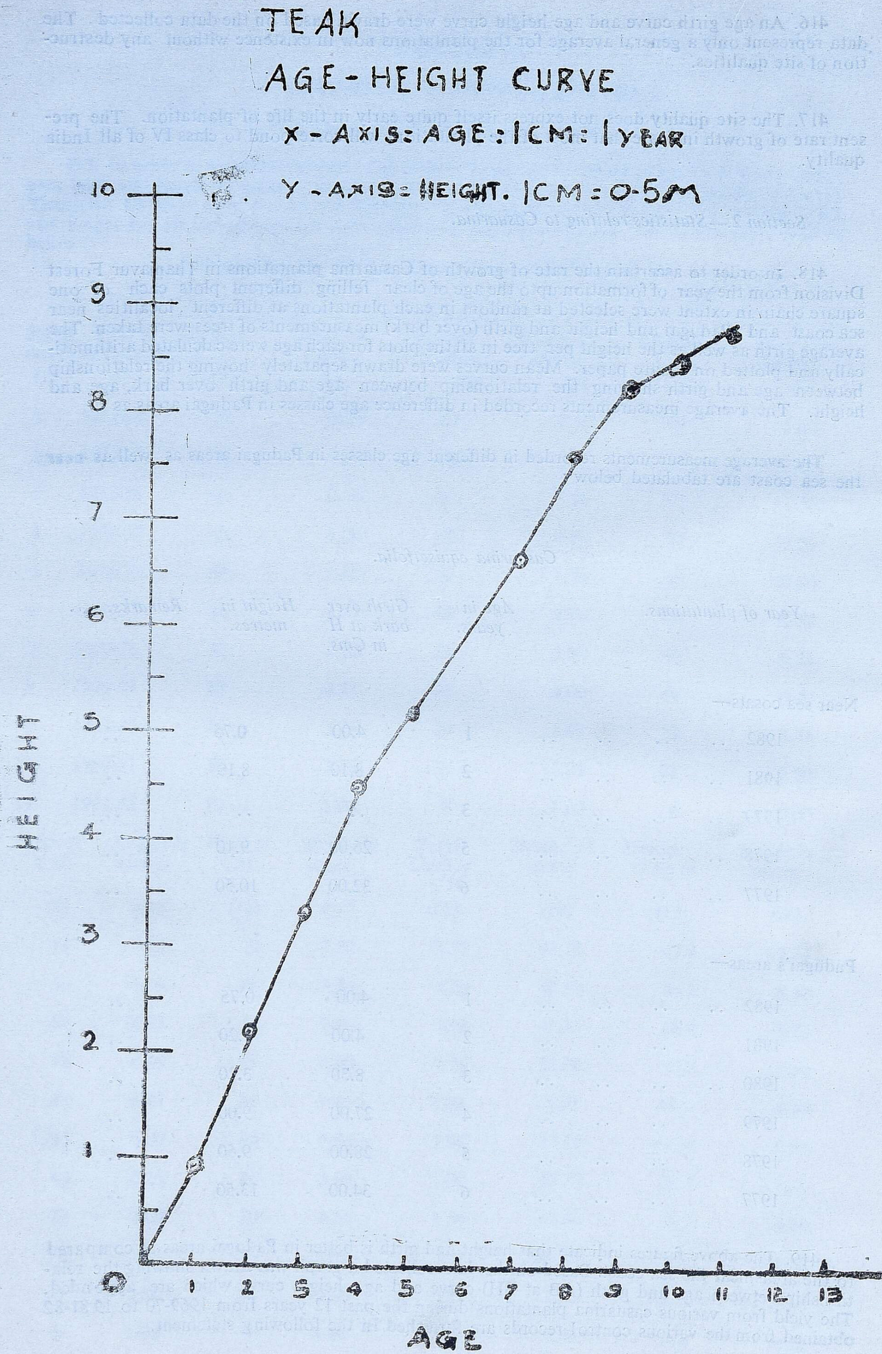
418. In order to ascertain the rate of growth of Casuarina plantations in Thanjavur Forest Division from the year of formation upto the age of clear felling different plots each of one square chain in extent were selected at random in each plantations at different localities near sea coast and Padugai and height and girth (over bark) measurements of trees were taken. The average girth as well as the height per tree in all the plots for each age were calculated arithmatically and plotted on square paper. Mean curves were drawn separately showing the relationship between age and girth showing the relationship between age and girth over bark, age and height. The average measurements recorded in difference age classes in Padugai areas as

The average measurements recorded in different age classes in Padugai areas as well as near the sea coast are tabulated below :

Casuarina equisetfolia.

Year of plantations.	*Age in years.*	*Girth over bark at H in Cms.*	*Height in metres.*	*Remarks.*
Near sea cosats—				
1982	1	4.00	0.75	..
1981	2	8.10	8.10	..
1979	3	..	..	..
1978	5	26.00	9.10	..
1977	6	32.00	10.50	..
Padugai's areas—				
1982	1	4.00	0.75	..
1981	2	4.00	1.20	..
1980	3	8.30	3.20	..
1979	4	27.00	9.00	..
1978	5	28.00	9.50	..
1977	6	34.00	13.50	..

419. The above figures indicate that height and girth is better in Padugai areas as compared to the areas near the sea coast. Based on the data collected a graph was drawn showing the relationship between age and girth (AB at BH) curve and age, height curve which are appended. The yield from various casuarina plantations during the past 12 years from 1969-70 to 1981-82 obtained from the various control records are furnished in the following statement.


TEAK
AGE-HEIGHT CURVE
X-AXIS: AGE: 1CM: 1 YEAR
Y-AXIS: HEIGHT. 1CM = 0.5M
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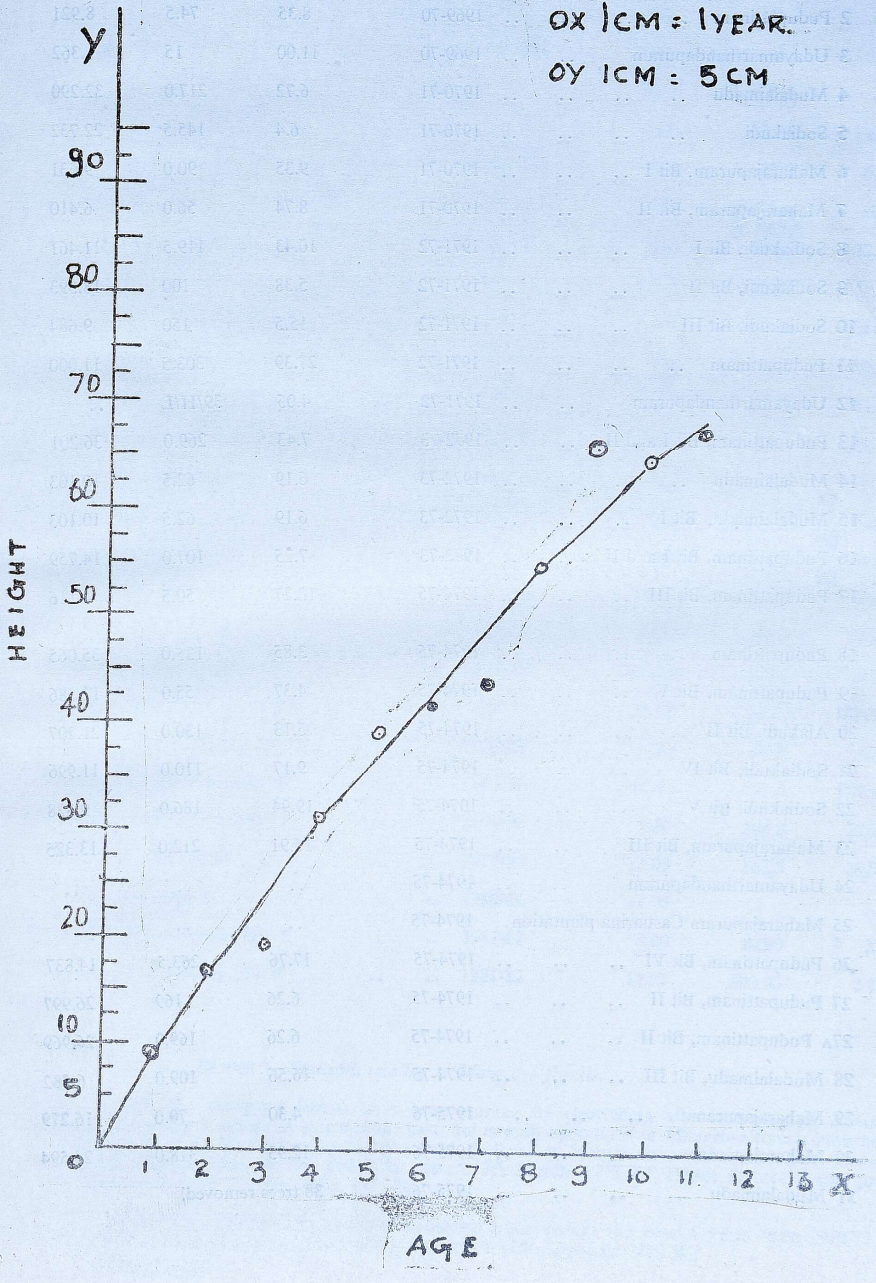
TEAK
AGE GIRTH CURVE



Serial number and name of plantation.	*Year of felling.*	*Area in ha.*	*Total yield in tonnes.*	*Yield in tonnes per ha.*
(1)	(2)	(3)	(4)	(5)
1 Alakkudi	1969-70	8.9	150	16.852
2 Pudupattinam	1969-70	8.35	74.5	8.921
3 Udayamarthandapuram	1969-70	11.00	15	1.362
4 Mudalaimadu	1970-71	6.72	217.0	32.290
5 Sodiakudi	1970-71	6.4	145.5	22.732
6 Maharajapuram, Bit I	1970-71	9.35	90.0	9.631
7 Maharajapuram, Bit II	1970-71	8.74	56.0	6.410
8 Sodiakudi, Bit I	1971-72	10.43	119.5	11.461
9 Sodiakudi, Bit II	1971-72	5.38	100	18.593
10 Sodiakudi, Bit III	1971-72	15.5	150	9.684
11 Pudupattinam	1971-72	27.39	303.5	11.000
12 Udayamarthandapuram	1971-72	4.05	39/H/L	..
13 Pudupattinam, Bit I and II	1972-73	7.43	269.0	36.201
14 Mudalaimadu	1972-73	6.19	62.5	10.103
15 Mudalaimadu, Bit I	1972-73	6.19	62.5	10.103
16 Pudupattinam, Bit I and II	1972-73	7.25	107.0	14.759
17 Pudupattinam, Bit III	1974-75	12.27	50.5	4.116
18 Pudupattinam	1974-75	3.85	135.0	35.065
19 Pudupattinam, Bit V	1974-75	4.37	55.0	12.586
20 Alakudi, Bit II	1974-75	6.13	130.0	21.207
21 Sodiakudi, Bit IV	1974-75	9.17	110.0	11.996
22 Sodiakudi, Bit V	1974-75	19.94	186.0	9.328
23 Maharajapuram, Bit III	1974-75	15.91	212.0	13.325
24 Udayamarthandapuram	1974-75	..	..	..
25 Maharajapuram Casuarina plantation..	1974-75	..	..	..
26 Pudupattinam, Bit VI	1974-75	17.76	263.5	14.837
27 Pudupattinam, Bit II	1974-75	6.26	169	26.997
27A Pudupattinam, Bit II	1974-75	6.26	169.0	26.969
28 Mudalaimadu, Bit III	1974-75	16.56	109.0	6.582
29 Maharajapuram	1975-76	4.30	70.0	16.279
30 Maharajapuram	1975-76	12.93	318.0	24.594
31 Mudalaimadu	1975-76	38 trees removed.		

Serial number and name of plantation	*Year of felling*	*Area in ha.*	*Total yield in tonnes.*	*Yield in tonns per ha.*
(1)	(2)	(3)	(4)	(5)
32 Mudalaimadu	1975-76	..	0.5	..
33 Mudalaimadu	..	..	0.5	..
34 Alakudi	1975-76	8.4	10.25	1.220
35 Pudupattinam	1975-76	9.10	63.0	6.923
36 Alakudi	1975-76	8.8	59 CRA 28 Babul	6.705
37 Pudupattinam	1976-77	3.36	244.5	72.768
38 Mudalaimadu	1976-77	13.33	250.5	18.792
39 Mudalaimadu, Bit I	1977-78	6.4	147.75	23.086
40 Maharajapuram, Bit II	1977-78	8.0	160.00	20.000
41 Maharajapuram, Bit II	1977-78	9.0	142.0	15.778
42 Maharajapuram, Bit I	1977-78	14.67	415.5	28.323
43 Maharajapuram	1978-79	13.0	96.0	7.385
44 Maharajapuram	1978 79	23.0	330.00	14.348
45 Pudupattinam	1978-79	14.0	202.0	14.429
46 Pudupattinam	1978-79	13.0	348.5	26.808
47 Pudupattinam	1978-79	27.39	599.0	21.879
48 Vadugagudi	1979-80	10.20	114.0	11.176
49 Maharajapuram, Bit II	1979-80	6.90	46.0	6.667
50 Maharajapuram, Bit III	1979-80	16.40	101.0	6.159
51 Pudupattinam, Bit I	1979-80	14.60	751.0	51.430
52 Pudupattinam, Bit II	1979-80	9.00	266.0	29.556
53 Mudalaimadu	1979-80	13.00	142.5	10.962
54 Vadugagudi	1980-81	12.00	..	..
55 Pudupattinam, Bit IV	1981-82	4.00	90.00	22.5
56 Pudupattinam, Bit V	1981-82	12.27	100.00	8.150

Section 3—Statistics relating to Mangrove forests.

420. The mangrove forests have been worked by clearfelling after retaining all advance growth below 2 meters in height in the past, but new all operations in Mangrove forests have been embed and the Mangrove forests have been declared as Nature Reserves as per Chief Conservator of Forests No. R. Dis. 19032/73, dated 13th March 1975 K4. Hence further coupes prescribed have been dropped, since 1975-76.

421. The yield from the various mangrove areas during the past 4 years from 1970-71 to 1974-75 obtained and furnished in the statements *vide* Appendix No. X.

PART II

FUTURE MANAGEMENT DISCUSSED AND PRESCRIBED

59—10—16

CHAPTER I.

BASIS OF PROPOSALS.

Section 1—The General Object of Management.

422. The General object of management of forests will be:—

(1) To exploit the forest resources in respect of minor forest produce, Cashew, Casuarina, small timber and fire wood on sound silvicultural principles.

(2) To increase the commercial value of forests by artificial regeneration of economic species.

(3) To afforest the coastal areas with Casuarina to serve as shelter belts, wind breakes and for the supply of fire wood.

(4) To afforest the river, canal fringes with teak and other commercially important species to meet the growing timber requirements of the population.

(5) To protect and improve the forests in the interest of forest conservancy, water supply, soil conservation, agriculture, climate, flora and fauna.

(6) To provide grazing facilitate to the cattle consistant with the principles of conservancy.

(7) To meet the demands of the established and prospective forest based industries for raw materials to the extent possible.

(8) To protect the forest against damage by man, fire and other harmful factors.

(9) To increase the forest resources by planting in tank beds, porambokes and road margins.

Section 2—Method of treatment to be adopted.

423. The method of treatment vary in each working circle which are described in detail under the respective working circles. The exploitation of fire-wood from the mangrove forest has been stopped in order to prescribe the mangrove areas as nature reserves in Chief Conserva tor's R. Dis. No. 19032/73 K4, dated 13th March 1975.

Casuarina will be introduced only on suitable and ideal sites where it can grow well. Casuarina plantations will continue to be worked through the agency of contractors under clearfelling system on area basis and it will be extended.

Grazing as higherto will be regulated by the issue of permits and will be prohibited for defined periods in plantations and worked fuel coupes.

The contractors agency will continue to be employed for the exploitation of minor forest produce on annual leases.

Prescriptions and suggestions on matters not covered by the different working circles are indicated in the chapter on miscellaneous regulations.

Section 3—Working Circles and their Distribution and Area.

424. To realise the objects of management setforth above, Five Working Circles are constituted. The following statement shows the various Working Circles, their area and distribution:—

Serial number.	*Name of the working circle.*	*Area in ha.*	*Distribution remarks.*
(1)	(2)	(3)	(4)
1	Timber plantation working cirlce ..	15236.17 72878900 Seedlings.	Area mainly along the Cauvery river system.
2	Fuel working circle	5690.57	Area mainly in tanks of Thanjavur Division.
3	Casuarina working circle ..	750.04	Pudupattinam, Alakudi, Mudalamadagu, Gopalasamudram, Maharajapuram and Coastal areas of Thanjavur Division.
4	Bamboo working circle	258 166.5 hm.	Canals and Padugais of Thanjavur Division.
5	Minor Forest Produce Working Circle.	Entire Thanjavur Forest Division.	Talanayar, Muthupet Reserve Forest, Chatram forests, Maharajapuram, Kodiakadu.

425. Cashew working circle and mangrove working circle prescribed by Thiru M. S. Karunakaran's Plan will be discontinued in the revised Plan because the mangrove doewara are all preserved as Nature reserve as per the Chief Conservator's R. Dis. No. 19032/73 K4, dated 13th March 1975 and all the cashew areas except two plantations were handed over to the TAFCORN as per G.O. Ms. No. 267, F & F Department, dated 3rd April 1979 communictaed in Chief Conservator's Ref. No. 4342/73-J2, dated 29th April 1974. The working of the two existing plantation areas will be regulated under Miscellaneous regulations

Management of existing miscelleneous plantations and various prescriptions regariding grazing, etc., have been discussed under Miscellaneous regulations.

Section—4. Period of working plan.

426. The Working Plan will be in force for period of 10 years from 1st July 1983 to 30th June 1983.

CHAPTER II.

Timber Plantation Woring Circle.

Section I.—General Constitution and object of Management

427. Timber plantation working circle is constituted with the object of growing Teak and other timber species on a large scale and to afforest the river and canal fringes with teak and other commercially important species to meet the growing timber requirements of the population. Also in order to augment the timber production in the state and to prevent soil erosion along canal and river banks.

428. *Genral constitution.*—This working circle includes all teakplantations so far raised along the canal and river banks as well as areas proposed to be planted, The area of the Working circle extends over Tanjor District all along the channel of Cauvery river system and on the right bank of coleroon. So far the effective area planted, since 1956 mainly with Tectona grand is 15300.17 ha. A separate list of plantations raised in this Division in Tiruchirapalli, Pudukottai and Cuddalore Divisions are appended and the same will be handed over to the respective District Forest Officers for future management. List of plantation raised so far in this division upto and inclusive of 1892 is furnished.

Section II—Division oj the area

429. The total aiea of tae Timber plantation W.C. will be about 29694.67 ha. of out of which 15300 ha. have already been planted with Teak and other timber species and area of 14394.50 ha. will be available for futuie planting during the plan period.

430. THE DISTRIBUTION OF THE AREA IS AS FOLLOWS:—

Serial number.	*Name of range.*	*Existing plantations upto 1982 in hectares.*			*Number of seedlings proposed for planting fresh (1983 to to 1992).*	*Number of reedlings proposed for planting gap 1983—1992.*	*Total.*
		Avenue.	*Compact.*	*Total.*			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Thanjavur Range ..	3,155.44	57.49	3,112.93	3,15,000	2,11,000	5,26,000
2	Kumbakonam Range ..	3,070.63	50.18	3,120.81	3,91,500	2,29,000	6,20,500
3	Tiruchirappalli Range ..	1,496.93	25.67	1,522.60	..	..	..
4	Sirkali Range	2,794.92	..	2,794.92	3,72,400	2,12,500	5,84,900
5	Mannargudai Range ..	3,159.91	..	3,159.91	3,12,500	2,00,000	5,12,500
6	Pattukkottai Range ..	697.00	..	697.00	4,50,000	1,85,000	6,35,000
7	Chidambaram Range ..	792.00	..	792.00	..	..	..
	Total ..	15,166.83	133.34	15,300.17	18,41,400	10,37,500	28,78,000

ABSTRACT.

Serial number.	Range.	Localities selected.	Number of seedlings proposed for planting.
(1)	(2)	(3)	(4)
1	Thanjavur Range	Thanjavur	5,26,000
2	Kumbakonam Range	Kumbakonam	6,20,500
3	Sirkali Range	Sirkali	5,84,900
4	Mannargudi Range	Mannargudi	5,12,500
5	Pattukkottai Range	Pattukkottai	6,35,000
		Total ..	28,78,900

431. *Planting Series.*—The Working Circle is divided into five plantation series. Particulars regarding area and locations of each plan ing series are furnished in the following statement. None of the plantations raised so far will attain the rotations age during the period of the plan. Hence no final felling of any plantations is contemplated during the currency of the plan.

Area of Each Series :

Serial number and name of the Range.	Name of the series.	Area in hectares already planted upto 1983.	Proposed area for future planting. Details furnished in Paragraphs 438 and 439.		Remarks.
			Fresh.	Gap.	
(1)	(2)	(3)	(4)	(5)	(6)
			(In seedlings.)		
1 Thanjavur Range ..	Thanjavur series	3,212.93	3,15,000	2,11,000	..
2 Kumbakonam Range ..	Kumbakonam series ..	3,120.81	3,91,500	2,29,000	..
3 Tiruchirappalli Range ..	Tiruchirappalli series ..	1,522.60	..	..	..
4 Sirkali Range	Sirkali series	2,794.92	3,72,400	2,12,500	..
5 Mannargudi Range ..	Mannargudi series	3,159.91	3,12,500	2,00,000	..
6 Pattukkottai Range ..	Pattukkottai series ..	697.00	4,50,000	1,85,000	..
7 Chidambaram Range ..	Chidambaram Range ..	792.00	..	..	..
	Total ..	15,300.17	18,41,400	10,37,500	..

Section 3—*Analysis of the Crop.*

432. The areas prescribed for planting with teak are mostly situated on both the banks of chan- nels in Thanjavur along the Cauvery system and on the right bank of Coleroon river. The areas on the banks of Vellar and Coleroon rivers which lie in South Arcot district and Tiruchirappalli district respectively will be handed over to the District Officers, Cuddalore and Tiruchirappalli Divisions for future management. The topography of the area is almost plain or gently sloping towards the sea. The future areas situated on the banks of canals are widely scattered. Soil is mostly alluvium with general mature of sand and varies from two to three metres in depth. Annual rainfall veries from 860 m.m. to 1533 m.m per annum, the main precipitation being from Sep- tember to December. There was a severe drought due to the total failure of monsoon during 1982 and till the first half of 1983.

Section 4—Method of Treatment.

433. The silvicultural system to be adopted is clearing all the available growth on the bank of the canals followed by concentrated artificial regeneration with Tectora grands. In areas where it is not suitable for planting with Tectona grandis other timber species will be planted as prescribed under miscellaneous regulations.

434. *Choice of Species.*—Tectona grandis is the only species to be planted in all the areas prescribed for planting under this working circle. Wherever the site and locality factors are not suited for teak other species suggested under miscellaneous regulations will be considered.

435. *Rotation.*—The plantations raised and to be raised in this division are mostly on the banks of channels and on the right bank of Coleroon and on both the banks of river Cauvery. As they are linear plantations with one or two rows on each bank and the soil fertility being poor luxuriant teak growth could not be expected. The quality being generally poor it may not be possible to produce large size timber logs. Hence the rotation is fixed tentatively at 60 years, in the absence of any correct increment trend.

436. *Espacement.*—The espacement prescribed for planting *Tectona grandis* is 2m. × 2m. According to the availability of space one or more rows will be planted on both the banks of channels and river margins.

437. The details of avenue and compact blocks of Teak plantations revised from 1956—1982 are furnished in Appendices XIII and XIV (*a*) to (*g*) Range wise list

438. PROPOSED AVENUE PLANTING [WITH REFERENCE TO PARAGRAPGH 431.]

STATEMENT SHOWING TEAK PLANTATION TO BE RAISED IN THANJAVUR FOREST DIVISION FROM 1983 TO 1993.

(a) *Thanjavur Series.*

Serial number and name of the river.	*L.B. or R.B.*	*Avenue. From.*	*Avenue. To.*	*Lengrh in Km.*	*Number of seedlings proposed.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)	(6)	(7)
		M.F.	M.F.			
			1983			
1 Paruthikottai channel ..	Both	00/0	2/0	6.40	15,000	
2 Kattalai Highlevel channel ..	Do.	80/0	82/0	3.20	7,500	
3 Kulamangalam	Do.	1/0	40/0	6.40	12,500	
			1984.			
1 Arumalai main channel ..	Both	0/00	10/0	3.20	10,000	
2 G.A. No. 4 and No. 5 channel	Do.	0/00	0/250	0.76	3,000	
	Do.	0/00	0/25	0.76	3,000	
3 Neivasal No. 1 channel ..	Do.	0/00	0/50	1.60	4,000	
4 5/35 Rear channel	Do.	0/00	0/50	1.60	5,000	
5 Do. ..	Do.	0/00	0/50	1.50	5,000	
			1985.			
1 Melavannipattu channel ..	Both	0/00	1/00	3.20	10,000	
2 G.A. Nos. 6 and 7 channels ..	Do.	0/00	0/25	0.76	5,000	
3 G.A. No. 2 channel ..	Do.	0/00	0/50	1.60	10,000	
			1986.			
1 Thirupuvanam	Both	0/00	1/00	3.20	10,000	
2 Chettichatram	Do.	0/00	0/50	1.50	5,000	
3 Puthur main channel ..	Do.	0/00	0/50	1.50	7,500	
4 Kannathangudi Killiyur channel.	Do.	0 00	0/70	2.00	7,500	

Serial uumber and name of the river	L.B. or R. B.	Aveuue. From	To	Length in KT.	Number of seeding proposed	Remarks
(1)	(2)	(3)	(4)	(5)	(6)	(7)
		M.F.	M.F.			
1987.						
1 Saliyakottai	Both	0/00	1/00	3.20	11,000	..
2 Vallam vari	Do.	0/00	1/50	4.70	14,000	..
3 18/90 RC 4	Do.	0/00	0/25	1.60	5,000	..
1988.						
1 Kalichapalli channel	Both	0/00	1/00	1.60	7,500	..
2 Sillathur	Do.	0/00	1/00	3.20	15,000	..
3 G.A. 12th channel	Do.	0/00	0/25	0.70	3,500	..
4 G.A. No. 1-A channel ..	Do.	0/00	0/50	16.0	4,000	..
1989.						
1 Kendiyar	Both	0/00	1/50	6.40	16,000	..
2 G.A. 8 channel	Do.	0/00	0/50	1.50	15,000	..
G.A. 9 chunnel	Do.	0/00	2/50	7.90		
G.A. 10 channel	Do.	0/00	0/50	1.50		
3 G.A. No. 3 Channel	Do.	0/00	0/50	1.6	4,000	..
1990.						
1 Arunpavapuram	Both	0/00	1/00	3.2	10,000	..
2 Retta Vaikkal	Do.	0/00	1/50	2.6	7,000	..
3 Odappa viduthi channel ..	Do.	0/00	1/50	4.8	14,000	..
4 G.A. No. 5-A. channel ..	Do.	0/00	0/50	1.6	4,000	..
1991.						
1 Olavayal channel	Both	0/00	1/50	4.8	15,000	..
2 Manjnanar	Do.	1/1	3/3	3.5	10,000	..
3 6/67 Rear channel	Do.	0/00	0/50	1.6	5,000	..
1992.						
1 6/88 Rear channel	Both	0/00	0/50	1.6	50,000	..
2 Kattalai Highlevel channel ..	Do.	71/0	73/00	1.6	10,000	..
3 Harithuvaiemangalam ..	Do.	0/1	5/1	8.0	15 000	..

(*b*) Statement showing Teak Plantation (Avenue) to be raised in Thanjavur Forest Division from 1983 to 1992.

Kumbakonam Series.

Serial number and name of the channel	*L.B. or R.B*	*Avenue.* *From*	*To*	*Length in Km*	*Number of plants to be planted*	*Remarks*
(1)	(2)	(3)	(4)	(5)	(6)	(7)
		1983.				
1 Coleroon	R.B.	46/0	52/0	9.6	25.000	..
2 Ammaiappan Vaikkal ..	Both	0/00	5/0	10.00	5,000	..
3 Kallur vaikkal	Do.	0/00	5/00	10.0	5,000	..
4 Narai vaikkal	Do.	0/00	5/00	10.00	5,000	..
		1984.				
1 Pandian vaikkal	Both	0/00	5/00	10.00	5,000	..
2 Aralur vaikal	Do.	0/00	5/00	10.0	5,000	..
3 Porisal Bogi	Do.	0/00	3/00	6.00	3,000	..
4 Koranattu Karuppur vaikkal.	Do.	0/00	5/00	10.0	5,000	..
5 The Perumal vaikkal	Do.	0/00	4/00	8.0	4,000	..
6 Mori vikkal drainage ..	Do.	0/00	5/00	10.0	5,000	..
7 Srinivasanallur vaikkal ..	Do.	0/00	3/00	6.0	3,000	..
8 Thandathottam vaikkal ..	Do.	0/00	4/00	8.0	4,000	..
9 Ariya Padaiyur vaikkal ..	Do.	0/00	4/00	8.0	4,000	..
		1985.				
1 Ammangudi vaikkal	Both	0/00	4/00	8.0	4,000	..
2 Elandurai	Do.	0/00	4/00	8.0	4,000	..
3 Thirumalairajapuram vaikkal	Do.	0/00	3/00	6.0	3,000	..
4 Valangudi vaikkal	Do.	0/00	3/00	6.0	3,000	..
5 Vadakarai vaikkal	Do.	0/00	3/00	6·0	3,000	..
6 Reddy vaikkal	Do.	0/00	3/00	6.00	3,000	..
7 Nachiyar Koil vaikkal	Do.	0/00	5/00	10.0	5,000	..
8 Thandalam vaikkal	Do.	0/00	3/00	6.0	3,000	..
9 Mathur	Do.	0/00	3/00	6.0	3,000	..
10 Sergudi	Do.	0/00	4/00	8.0	4,000	..
11 Semmangudi	Do.	0/00	5/00	10.0	5,000	..
		1986.				
1 Parappadi vaikkal	Both	0/00	7/7	15.4	8,000	..
2 Thillaiyamboor	Do.	0/00	5/0	10.0	5,000	..
3 Santhanam vaikkal ..	Do.	0/00	3/00	6.00	3,000	..
4 Narasimgapettai	Do.	0/00	5/00	15.00	5,000	..
5 Karuppur	Do.	0/00	4/00	8.00	4,000	..
6 Pandavaiyar	D ›.	89/3	92/0	8.6	11,000	..
7 Neelamoor channel	Do.	0/00	2/00	4.0	2,000	..
		1987.				
1 Pickakalaiyar	Both	0/5	8/5	16.00	16,000	..
2 Chithar	Do.	0/00	5/0	10.0	10,000	..
3 Thappalam Puliure	Do.	0/00	6/0	12.0	12,000	..

		1988				
1 Yddaiyar	Both	0/00	4/0	8.0	8,000	..
2 Vellaiyar	Do.	90/00	93/0	9.6	13,000	..
3 Do. ..	..	..	..	..	..	..
4 Annam Arasanar	Both	0/00	7/0	14.0	14,000	..
5 Cauvery Kondanar	Do.	0/00	4/0	8.0	4,000	..
		1989				
1 Vellaiyar	Both	73/5	78/0	14.0	28,000	..
2 Panayar	Do.	0/00	5/0	10.0	11,500	..
		1990				
1 Palavanar	Both	0/00	5/0	10.0	5,000	..
2 Solavathiyar	Do.	0/00	5/0	10.0	5,000	..
3 Seeravettanar	Do.	0/00	5/0	10.0	10,000	..
4 Thiruvainoor channel ..	Do.	0/00	11/0	22.0	14,000	..
		1991				
1 18th channel	Both	0/00	6/0	12.00	15,000	..
2 Odaikkaudi	Do.	0/00	8/0	16.0	8,000	..
3 Palayanar channel	Do.	2/0	14/0	24.0	12,000	..
4 Chikkal channel	Do.	4/0	8/0	8.0	8,000	..
		1992				
1 Thirukottaram channel ..	Both	0/00	3/0	6.0	5,000	..
2 Vanjiyar	L. B.	84/5	88/0	5.0	3,000	..
3 Eramiyar channel	Both	0/00	9/0	18.0	18,000	..
4 Kaduvaiyar	Do.	92/5	96/4	6.2	12,000	..
5 Mudiyullanar	Do.	0/00	3/4	6.8	6,000	..
				Total ..	3,91,500	

(C) STATEMENT SHOWING THE TEAK PLANTATIONS (AVENUE) TO BE RAISED IN THANJAVUR FOREST DIVISION FROM 1983.

Sirkali series

Serial number and Name of the Channels.	*L. B. or R.B.*	*Avenue From*	*To*	*Length in KM*	*Number of plants to be planted*	*Remarks*
(1)	(2)	(3)	(4)	(5)	(6)	(7)
		1983				
		M. F.	*M.F.*			
1 Pudumannaiyar river	Both	0/0	12/0	19.2	19,200	..
2 Do. ..	R.B.	22/0	26/0	14.0	8,000	..
3 Kallumalaiyar	Both	0.0	13/7	13.7	13,700	..
				Total ..	40,900	

Serial number and Name of the channels	L. B. or R. B.	Avenue From	Avenue To	Length in K.M	Number of plants to be planted	Remarks
(1)	(2)	(3)	(4)	(5)	(6)	(7)
		M.F.	M.F.			
1984						
4 Athiyur channel	Both	0/0	3/2	3.2	3,700	—
5 Erukkur Vaikkal	Do.	0/0	4/8	4.8	4,800	—
6 Andi Vaikkal	Do.	0/0	6/0	6.0	6,000	—
7 Eri Vaikkal	Do.	0/0	5/0	5.0	5,000	—
8 Thillan Vaikkal	Do.	0/0	8/0	8.0	8,000	..
9 Kona Vaikkal	Do.	0/0	6/0	6.0	6,000	..
				Total ..	33,500	
1985						
1 South Rajan	Both	97/0	99/0	10.0	21,800	..
2 Oosi Vaikkal	R.B.	0/0	2/0	2.0	1,000	..
3 Kunnam Vaikal	Both	0/0	8/0	8.0	8,000	..
4 Puduvaikkal	Do.	0/0	4/8	4.8	4,800	..
5 Mudalaimadu channel ..	Do.	0/0	4/8	4.8	4,800	..
				Total ..	40,400	
1986						
1 Parathamedu	Both	0/0	5/6	5.6	5,600	..
2 Poothangudi channel ..	Do.	0/0	4/0	4.0	4,000	..
3 Namasivayapuram channel..	Do.	0/0	5/0	5.0	5,000	..
4 Atur Kalyanasolapuram ..	Do.	0/0	5/0	5.0	5,000	..
5 Kesingam channel	Do.	0/0	5/0	5.0	5,000	..
6 Boothamangalam channel ..	Do.	0/0	5/0	5.0	5,000	..
7 Pattuvarthi channel	Do.	0/0	5/0	5.0	5,000	..
Thiruvalaputhur channel ..	Do.	0/0	4/0	4.0	4,000	..
				Total ..	38,600	
1987						
1 New Oosi vaikkal	Both	0/0	5/0	5.0	5,000	..
2 Thirucheittrambalam channel	Do.	0/0	4/0	4.0	4,000	..
Veerasolan river	..	68/0	77/5	15.0	30,000	..
				Total ..	39,000	

(1)	(2)	(3) M.F.	(4) M.F.	(5)	(6)	(7)
			1988			
1 Vettu vaikkal	Both	0/0	10/0	10.0	10,000	..
2 Komal channel	Do.	0/0	8/0	8.0	8,000	..
3 Annamalai channel	Do.	0/0	6/0	6.0	6,000	..
4 Pallavan channel	Do.	0/0	6/0	6.0	6,000	..
5 Karuppur channel	Do.	0/0	7/0	7.0	7,000	..
				Total ..	37,000	
			1989			
1 Parayan vaikkal (Veerachaolan)	Both	0/0	6/0	6.0	6,000	..
2 Manja Vaikkal	Do.	0/0		4.0	4,000	..
3 Marudhampalayam	Do.	0/0	4/0 6/0	6.0	6,000	..
4 Parayan vailkkal (Mahimlayar)	Do.	0/0	5/0	5.0	5,000	..
5 Vadakadaladi	Do.	0/0	6/0	6.0	6,000	..
6 Thigili channel	Do.	0/0	8/0	8.0	8,000	..
				Total ..	35,000	
			1990			
1 Mailan channel	Both.	0/0	8/0	8.0	8,000	..
2 Pallavan channel	Do.	0/0	8/0	8.0	8,000	..
3 Muthappa cauvery chennel ..	Do.	0/0	8/0	8.0	6,000	..
4 Palan	Do.	0/0	6/0	6.0	6,000	..
5 Sathia vannan channel ..	Do.	0/0	10/0	10.0	10,000	..
				Total ..	40,000	
			1991			
1 Malaiyur channel	Both	0/0	7/0	7.00	7,000	..
2 Velan channel	Do.	0/0	10/0	10.00	10,000	..
3 Odagendan channel	Do.	0/0	6/0	6.00	6,000	..
4 Cauvery Agaram channel ..	Do.	0/0	6/0	6.0	6,000	..
5 Peria navalam channel ..	Do.	0/0	4/0	4.0	4,000	..
				Total	33,000	
			1992			
43 Vikram river	Both	0/0	7/0	7.0	7,000	..
2 Kali vaikal	Do.	0/0	8/0	8.0	8,000	..
3 Sethu main channei	Do.	0/0	10/0	10.0	10,000	..
4 Tealaignayiru channel ..	Do.	0/0	10/0	10.0	10,000	..
				Total ..	35,000	
			Grand total ..	352.1	3,724.00	

(D) STATEMENT SHOWING TEAK PLANTATIONS (AVENUE) TO BE RAISED IN THANJAVUR FOREST DIVISION FROM 1983—1993.

Mannargudi series.

Serial number and name of the river.	*L. B. or R. B.*	*Avenue. From.*	*Avenue. To.*	*Length in kilometre.*	*Number of seedlings proposed.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1983						
1 Illuppadi Vaikkal	Both	1/0	2/0	3.20	10,000	..
2 No. 3. Puthoor Vaikkal ..	Do.	0/0	2/6	8.20	10,000	..
3 Katteri Vaikkal	Do.	0/0	1/0	3.20	10,000	..
				Total ..	30,000	
1984						
4 Koolayar	Both	0/0	3/0	4.80	15,000	..
5 Agamalanaru	Do.	3/0	4/0	1.60	10,000	..
6 Koraiyar	L. B.	72/0	74/0	3.20	6,000	..
				Total ..	31,000	
1985						
7 Vadacheri Main Channel ..	Both	0/0	1/20	3.80	10,000	..
8 Kannanaru	Do.	3/7	5/0	4.10	10,000	..
9 Vadacheri No. 7, Channel ..	Do.	0/0	1/0	3.20	6,000	..
10 Vadacheri No. 10th Channel.	Do.	0/0	2/50	7.90	8,000	..
				Total ..	34,000	
1986						
11 Vadavar Extension Channel ..	Both	5/95	6/50	1.60	6,000	..
12 Vadavar 12th Channel ..	Do.	0/0	0/5967	1.80	6,000	..
13 Maharajapuram No. 3 Channel	Do.	0/0	1/0527	3.36	8,000	..
14 Vadavar 3rd Channel ..	Do.	0/0	1/0921	3.48	8,000	..
15 Vadavar 4th Channel ..	Do.	0/0	0/8228	2.49	4,000	..
				Total ..	32,000	
1987						
16 Kannararu	Both	4/0	6/0	6.40	10,000	..
17 Kannanaru	Do.	6/0	10/0	12.80	15,000	..
18 Mooranallur Channel	Do.	5/0	7/0	4.20	6,000	..
				Total ..	31,000	
1988						
19 Valavanar	Both	2/0	4/4	5.00	10,000	..
20 Mulliyar	Do.	96/0	97/5	2.60	10,000	..
21 Adappar	Do.	95/0	97/5	4.20	6,000	..
				Total ..	30,000	

(1)	(2)	(3)	(4)	(5)	(6)	(7)
		Mannargudt Series—cont.				
		1989				
22 Pamini South Rajan	Both	0/00	2/0	3.20	10,000	..
23 Pamini North Rajan	Do.	0/00	2/00	4.20	6,000	..
24 Mulliayar	Do.	97/5	400/0	4.20	15,000	..
				Total ..	31,000	
		1990				
25 Mulliyar	Both	100/0	103/0	4.80	10,000	..
26 Manamkondhanar	Do.	0/0	1/50	4.70	10,000	..
27 Kodivinayakanallur Channel	Do.	0/50	3/0	7.80	10,000	..
				Total ..	30,000	
		1991				
28 Old Palavanar	Both	0/0	1/0	1.60	7,500	..
29 Thanikottukam IInd Vaikkal.	Do.	3/0	4/5	2.60	10,000	..
30 Kandhupaichunar Vaikkal ..	Do.	0/10	3/00	4.80	10,000	..
31 Paminiar	Do.	82/10	83/0	1.60	6,000	..
				Total ..	33,500	
		1992				
32 Thanikottagam IInd vaikkal ..	Both	0/0	3/0	4.80	10,000	
33 Thukkananguruviyary ..	Do.	0/50	2/50	4.80	10,000	
34 Manakondhanar	Do.	1/50	3/0	4.80	10,000	
				Total ..	30,000	

(E) STATEMENT SHOWING TEAK PLANTATION TO BE RAISED IN THANJAVUR FOREST DIVISION.

Pattukottai Series.

1983

1 Kalanivasal Channel	Both	0/00	3/75	11.80	15,000	..
2 Othangadu Channel	Do.	0/00	1/00	3.20	5,000	..
3 Pudupattinam Channel ..	Do.	0/00	5/00	8.00	15,000	..
4 Puvanam Channel	Do.	0/00	0/30	1.00	2,000	..
5 Pudupattinam No. 5	Do.	0/05	0/40	1.20	3,000	..
				Tot ..		

Serial number and name of the channels.	L. B. or R.B.	Avenue. From.	To.	Length. in kilometres.	Number of seedlings proposed.	Remarks.
(1)	(2)	(3)	(4)	(5)	(6)	(7)
		Pudukkottai Series—cont.				
		1984				
1 Olavayal Extension Channel	Both	5/25	7/90	6.60	20,000	..
2 Kayavoor Channel	Do.	0/00	2/00	6.40	15,000	..
3 Pudupattinam Channels ..	Do.	5/00	7/00	6.40	15,000	..
		1985				
1 Sethubavachatram Main Channel.	Both	0/30	2/70	7.60	15,000	..
2 Veerakudi Channel	Do.	0/00	2/50	7.90	10,000	..
3 Pinnavasal Channel, Pathy Channel.	Do.	0/00	1/00	1.20	5,000	..
4 Rajamadam Branch Channel.	Do.	3/40	5/80	7.60	20,000	..
		1986				
1 Rajamadam Branch Channel	Both	5/80	9/40	11.40	25,000	..
2 Rajamadam Branch Channel	Do.	11/00	14/00	9.60	15,000	..
3 Pudupattinam No. 4 Channel	Do.	0/00	0/40	1.20	2,500	..
4 Pudupattinam No. 6 Channel.	Do.	0/00	1/40	4.40	7,500	..
		1987				
1 Karasavayal Channel ..	Both	0/00	2/70	8.50	7,500	..
2 Pudupattinam No. 7 Channel.	Do.	0/00	1/50	4.70	10,000	..
3 Santhanpet Main Channel ..	Do.	0/00	0/70	2.00	5,000	..
4 Sethubavachatram No. 6 Channel.	Do.	0/00	0/40	1.20	5,000	..
5 Sethubavachram Manin Chennel.	Do.	2/70	5/00	7.40	15,000	..
6 Sethubavachatram No. 7 Main Channel.	Do.	0/00	0/70	2.70	7,500	..
		1988				
1 Naduvikkottai Channel ..	Both	0/00	1/35	4.20	12,500	..
2 Sethubavachatram No. 5 Channel.	Do.	0/00	2/30	7.40	10,000	..
3 Pudupattinam No. 2 Channel.	Do.	0/25	2/00	5.45	15,000	..
4 Pudupattinam No. 2 Channel.	Do.	2/00	4/00	6.40	15,000	..
		1989				
1 Vadakadu Branch Channel ..	Both	1/35	4/00	8.30	15,000	..
2 Vattakudi Channel	Do.	0/00	1/00	3.20	5,000	..
3 Aggaravallam Main Channel.	Do.	0/00	0/80	2.40	10,000	..
4 Vadakadu No. 8 Channel ..	Do.	0/00	0/25	0.75	2,500	..
5 Vadakadu No. 10 Channel ..	Do.	0/00	0/25	0.75	2,500	..
6 Rajamadam No. 20 Channel	Do.	0/00	1/00	3.20	10,000	..

Pudukkottai Series—cont.

1990						
1 Vadakadu No. 6 Channel ..	Both	0/00	0/15	0.45	1,500	..
2 Muthukruchi Channel ..	Do.	0/00	0/40	1.70	3,000	..
3 Musuri Channel	Do.	0/00	0/25	0.75	3,000	..
4 Nainakuppam Channel ..	Do.	0/00	1/70	4.70	5,000	..
5 Rajamadam No. 17 Channel	Do.	0/00	0/30	0.90	1,500	..
6 Narasingapuram Channel ..	Do.	0/00	1/70	3.20	5,000	..
7 G. A. No. 16 Channel ..	Do.	0/00	0/45	1.35	5,000	..
8 G.A. No. 17 Channel ..	Do.	0/00	0/45	1.35	5,000	..
9 Kalyanaodai Channel.. ..	Do.	0/00	1/00	3.20	10,000	..
10 Pulavanchi Channel	Do.	0/00	0/15	0.45	2,000	..
1991						
1 Andami Channel	Both	0/00	1/00	3.20	10,000	..
2 G.A. No. 14 Channel ..	Do.	0/00	0/20	0.60	2,500	..
3 G.A. No. 15 Channel ..	Do.	0/00	0/25	0.75	2,500	..
4 Santhanakadu Channel ..	Do.	0/00	1/35	4.25	13,000	..
5 Vadakadu No. 5 Channel ..	Do.	0/00	1/00	3.20	10,000	..
6 Mullar Pattikkadu Channel ..	Do.	0/77	1/00	3.20	5,000	..
1992						
1 Ampalapatti Channel ..	Both	0/00	0/90	2.20	7,500	..
2 Ettipulikadu No.2, No. 3, No.5 Channel.	Do.	0/00	2/00	6.40	15,000	..
3 Paravathu Channel	Do.	0/00	0/16	2.70	7,000	..

439. (A) Statement showing the gap areas available in Teak plantation to be raised in Thanjavur Forest Division from 1983 to 1992.

Serial number, Year and name of the plantation.	*Year to be planted.*	*Side of the bank.*	*Height.* R.B.	*Height.* L.B.	*Number of seedlings to be planted.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Thanjavur Series.						
1 1956 Vennar	1983	L.B.	28/6	34/4		
2 1957 Do.	Do.	Do.	35/6	45/0	5,000	..
	Do.	R.B.	37/4	45/0		
3 Do. Vettar	Do.	L.B. R.B.	37/2 37/4	45/0 45/0	12,000	..
4 1958 Vadavar	D..	L.B.	0/50	1/10	4,000	..
5 1950 Vennar	1984	R.B.	55/0	58/1	6,000	..
6 1959 Vadavar	Do.	L.B.	7/50	10/80		
7 1960 Vennar	Do.	R.B.	58/1	67/5	10,000	..
		Do.	55/0	67/4		
8 Do. Vettar	Do.	L.B. R.B.	63/3 65/0	66/1 66/1	5,000	..
9 1957 G.A. Canal	1985	Do	12/30	14/35	10,000	..
10 Do. Cauvery	1987	Do.	22/7	27/0	15 000	..

(1)	(2)	(3)	(4)	(5)	(6)	(7)
11 1958 G.A. Canal	1986	R.B.	14/35	19/20	15,000	..
12 Do. Kalyana Odai ..	Do.	Do.	0/00	4/20	6,000	..
13 1959 G.A. Canal	1987	Do.	19/25	22/85	15,000	..
14 1957 Cauvery	1988	L.B.	15/2	21/1	8,000	..
15 1960 Kattalai H.L. Channel	..	Both	19/6	19/6	10,000	..
16 1961 Do.	..	R.B.	24/5	39/5		
		L.B.	24/5	38/0	8,000	.. *
17 1962 Do.	..	Both	17/6	19/6		
18 1970 Vettar	1989	Do.	86/00	90/00	5,000	..
19 1984 Pillaivaikkal ..	Do.	Do.	2/1	4/5	7,500	..
20 1974 16 Cauvery	Do.	Do.	5/00	10/00	7.500	..
21 1975 Vettacher No. 2 Channel.	1990	Do.	0/50	5/80	7,500	..
22 1976 Konakadungal ..	Do.	Do.	10/00	15/00	7,500	..
23 Do. Puthar	Do.	Do.	0/50	3/80	5,000	..
24 1977 Vennar	1991	Do.	82/00	86/00	8,000	..
25 Do. Vamantha Cauvery ..	Do.	Do.	0/00	3/00	8,000	..
26 Do. Konavaikal	Do.	Do.	0/00	8/00	6,000	..
27 1978 Konganvaikal ..	1992	Both	0/00	8/00	8,000	..
28 Do. Neivasal Thenpathi Channel	Do.	Do.	0/00	5/35	8,000	..
29 1977 Chembu Cauvery ..	Do.	Do.	6/00	8/00	4,000	..
				Total Seedlings ..	2,11,000	

* * *Item*: 14 *to* 17.—Now all these plantations are under the control of Tricuhci division. The Divisional Forest Officer, Thanjavur will be informed to take up the work by the Divisisonal Forest Officeer, Tiruchirappalli Division.

STATEMENT SHOWING THE GAP AREAS AVAILABLE IN TEAK PLANTATION TO BE RAISED IN THANJAVUR FOREST DIVISION FROM 1983—1992.

(b) Kumbakonam series.

Sl. No. (1)	Year. (2)	Name of plantation. (3)	Year to be planted. (4)	L.B. R.B. (5)	Length From (6)	Length To (7)	No. of seedlings to be planted. (8)	Remarks (9)
1	1959	Kudamurity	1983	L.B. Do. R.B.	50/7 57/2 50/00	51/2 59/1 58/7	2,000	..
2	Do.	Mudikondan	Do.	L.B. R.B.	54/7 54/00	60/7 60/00	2,500	..
3	Do.	Cauvery	Do.	L.B. R.B.	48/5 53/4	52/7 56/6	2,500	..
4	Do.	Arasalar	Do.	Do. L.B.	53/5 55/00	55/00 56/00	1,000	..
5	Do.	Thirumalairajan ..	Do.	Do.	55/00	56/00	1,000	..
6	1960	Kudamurity	Do.	Do. R.B.	59/00 59/1	63/1 62/5	3,000	..
7	Do.	Thirumalairajan ..	Do.	L.B. R.B.	57/00 55/1	59/5 59/2	2,000	..
8	Do.	Mudikavery	Do.	L.B. Do. R.B.	54/2 57/7 58/4	56/4 59/7 60/2	2,000	..
9	Do.	Arasalar	Do.	L.B. R.B.	57/3 56/3	60/00 59/1	2,000	..
10	1961	Vettar	Do.	L.B. R.B.	73/4 72/6	74/4 75/2	6,000	..
11	Do.	Arasalar	1984	Both	62/00	66/5	5,000	..
12	Do.	Thirumalairajan ..	Do.	Do. R.B.	59/4 59/4	66/00 62/5	5,000	..
13	1962	Solasoodamaniyar ..	Do.	L.B. L.B.	67/5 69/2	75/3 72/00	4,000	..
14	Do.	Pandavayar . ..	Do.	Do. R.B.	70/5 69/2	75/3 72/00	12,500	..
15	Do.	Mudikondan	1985	R.B.	62/2	67/3	6,500	..
16	Do.	Arasalar	Do.	L.B. Do.	69/7 66/5	72/2 72/3	6,000	..
17	Do.	Pattarasanar	Do.	Do.	71/6	72/3	1,000	..
18	1963	Solasoodamaniar ..	Do.	Do. R.B.	69/6 71/2	74/3 73/5	1,000	..
19	Do.	Pandavaiyar	Do.	L.B. R.B.	68/1 68/6	70/5 68/7	12,000	..
20	Do.	Kodamurity	Do.	Do. L.B. Do.	63/7 63/1 65/00	66/3 65/00 65/5	1,000	..
21	Do.	Thirumalairajan ..	1986	Do. R.B.	66/2 66/3	69/3 69/3	13,000	..
22	1964	Arasalar	Do.	Do. L.B.	76/1 77/7 77/7	77/00 80/1 80/1	10,000	..
23	De.	Puthar	1987	R.B. L.B.	66/4 68/5 75/5	68/2 70/3 67/7	9,500	..
24	1965	Velappar	Do.	Do. R.B.	68/7 82/00 72/3	69/3 73/6 73/6	6,000	..
25	Do.	Puthar	Do.	Do. L.B.	70/2 69/6 73/00	74/5 70/6 73/2	6,000	..
26	Do.	Noolar	1988	Do.	76/2	79/4	9,500	..
27	1966	Odambogi	Do.	Do. R.B.	80/0 78/3 78/6	 84/7 84/6	1,000	..
28	Do.	Velapper	Do.	L.B. R.B.	73/5 73/5	76/7 76/5	16,000	
29	Do.	Mudikondan	1989	Do. L.B.	68/00 67/7	80/4 80/4	16,000	..
30	1967	Velappar	Do.	Do. R.B.	77/00 76/7	79/5 79/6	5,000	..
31	Do.	Odambogi . ..	1990	L.B. R.B.	85/2 85/3	90/2 90/1	25,000	..
32	1969	Mudikondan	1991	Both	80/5	87/5	7,500	..
33	Do.	Naramaniyur ..	Do.	Do.	3/3	5/2	4,500	..
34	Do.	Vettar .. .	1992	Do.	91/4	92/7	10,000	..
35	1968	Pandavaiyar	Do.	Do.	80/2	87/7	12,000	..

STATEMENT SHOWING THE GAP AREAS AVAILABLE IN TEAK PLANTATIONS TO BE RAISED IN THANJAVUR FOREST DIVISION.

(c) Sirkali series.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	1961	Cauvery	1983	R.B.	60/1	66/2	..	..
				L.B.	60/2	64/2		
2	Do.	Veerasolanur	Do.	R.B. L.B.	61/3 60/6	68/00 67/6	12,000	..
3	1963	Manniyar	Do.	Both	60/00	64/2	12,000	..
4	Do.	South Rajan	1984	Do.	68/00	71/6	5,000	..
5	Do.	Manniyar	Do.	..	64/3	66/4	5,000	..
6	1964	Do. ..	Do.	..	66/4	72/00	12,000	..
7	Do.	Kumuki Manniyar ..	1985	Both	0/00	8/0	6,000	..
8	1965	Manniyar	Do.	Do.	72/00	76/4	10,000	..
9	1966	Do.	Do.	..	76/4	79/2	6,000	..
10	Do.	Cauvery	1986	..	89/00	90/7	..	..
11	1967	Do. ..	Do.	..	90/7	93/7	..	..
12	Do.	South Rajan	Do.	..	71/6	93/4	15,000	..
13	Do.	Pdaiyar	Do.	..	0/00	4/7	3,000	..
14	1970	Vikramanar	Do.	..	73/00	76/00	10,000	..
16	1971	Govinda Cauvery ..	Do.	..	0/00	6/00	4,500	..
17	Do.	Thirunagari	Do.	..	0/00	6/00	3,500	..
18*	1973	Coleroon	Do.	..	38/3	72/4	9,000	..
19	Do.	Palavar	1985	Both	6/1 & 2	12/00	6,500	..
20	1974	Palavar Bit ..	Do.	Do	12/00	19/00	10,000	..
21	Do.	Palavar Bit II	1989	Do.	19/00	25/1	10,000	..
22	1975	Palavar	Do.	..	25/1	30/2	10,000	..
23	Do	Do.	Do.	..	30/2	35/00	5,000	..
24	Do.	Rajendran	1990	..	3/2	8/00	4,000	..
25	1976	Nandodayur	Do.	..	3/0	5/00	12,000	..
26	1977	Thirumanagari Bit I ..	1991	..	0/00	9/00	6,000	..
27	Do.	Uppanar	Do.	..	6/00	9/00	2,000	..
28	Do.	South Rajan	Do.	..	9/00	97/00	10,000	..
29	1979	Manikoraniar ..	1992	..	0/00	5/00	6,000	..
30	1978	Alingiar	Do.	..	0/00	3/5	11,000	..
31	1979	Manikoraniar ..	Do.	..	5/00	7/6	3,000	..
						Total ..	2,12,500	

* The Divisional Forest Officer, Cuddalore will take up the work. The Divisional Forest Officer, Thanjavur will inform to him.

(d) Mannargudi Series.

Serial number.	*Year.*	*Name of plantation.*	*Year to be planted.*	*L. B. or R.B.*	*Height.*		*Number of seedlings proposed.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	1959	Mannargudi Main channel	1984	..	2/90	4/55	8,000	..
2	1960	Vadavar Extension channel	Do.	..	0/05	5/95	12,000	..
3	1961	Paminiar R.B.	1985	..	60/0	69/0	10,000	..
4	Do.	Koraiyar	Do.	..	63/0	69/4	10,000	..
5	1963	Koraiyar R.B.	1986		82/0	83/5	1,000	..
				L.B.	79/1	82/0		
6	1965	Koraiyar L.B.	Do.	..		82/0	1,000	..
7	Do.	Mulliyar	1987	R.B.	8/2	86/2	10,000	..
8	1968	Harichandra Nathi ..	Do.	L.B.	75/2	79/0	5,000	..
9	1970	Harichandra Nathi ..	Do.	R.B.	79/0	86/0	10,000	..
10	1969	Ayyanar R.B.	Do.	Do.	79/5	81/4	5,000	..
11	1967	Mulliyar R.B.	1988	Do.	78/2	81/1	..	..
				Do.	86/2	89/7	..	..
12	1970	Palavanar	..	Both	0/0	3/1	5,000	..
13	Do.	Harichandra Nathi ..	..	R.B.	79/0	79/4	5,000	..
					83/0	83/7	5,000	..
14	1971	Appan Bit II	1989	L.B.	87/0	to 95/0	..	..
				R.B.	90/0	to 93/0	..	..
15	1972	Ponnukanthanar	Do.	L.B.	0/6	6/0	6,000	..
16	1971	Adappar Bit I	Do.	R.B.	82/8	86/0	6,000	..
				L.B.	82/1	86/0		
17	1972	Marakka Koraiyar ..	1990	R.B.	0/0	6/0	6,000	..
				L.B.	0/0	6/5		
18	1973	Palaayar main channel ..	Do.	L.B.	0/0	2/30	6,000	..
				L.B.	0/0	2/30		
19	1973	Vattacheri main channel ..	1991	R.B.	1/20	3/70	8,000	..
				R.B.	1/20	3/70		
20	1974	Saluvanar	Do.	R.B.	2/0	6/6	8,000	..
				L.B.	2/0	6/8		
21	Do.	Koraiyar	1991	R.B.	83/5	85/4	6,000	..
				R.B.	83/5	84/7		
22	Do.	Saluvanar	Do.	R.B.	23/00	27/00	6,000	..
23	1976	Kannanary	Do.	R.B.	23/00	27/00	6,000	..
24	1977	Adiveeraramanar	Do.	R.B.	0/0	2/3	8,000	..
				L.B.	0/0	3/3		
25	Do.	Nattuvaikal	Do.	R.B.	0/0	2/3	8,000	..
				L.B.	0/0	2/3		
26	1978	Mooranallur Tap	1993	Both	0/0	5/0	..	..
27	Do.	Kattuvaikkal	1991	Do.	3/0	7/0	4,000	..
28	Do.	Palaya Pandiyar	Do,	R.B.	3/0	5/0		..
				L.B.	3/0	5/0	4,000	..
29	Do.	Koraiyar	Do.	R.B.	79/3	90/7		..
				L.B.	89/3	90/7	4,000	..

STATEMENT SHOWING THE GAP AREAS AVAILABLE IN TEAK PLANTATION TO BE RAISED IN THANJAVUR FOREST DIVISION FROM 1983-1993.

(c) *Pattukkottai Series.*

Serial number.		*Name of plantation*	*Year to be planted.*	*L.B. or R.B.*	*From.*	*Avenue. To.*	*Number seedlings.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	1959	G.A. Canal	1984	Both.	23/60	25/85	20,000	..
2	Do.	Do. ..	Do.	Do.	25/85	28/10	20,000	..
3	1960	Do. ..	1985	Do.	28/10	30/95	20,000	..
4	Do.	Do.	1986	Do.	30/95	33/80	20,000	..
5	Do.	Do. ..	1987	Do.	33/80	35/85	2,000	..
6	1974	Kalyana Odai	1988	Do.	7/00	10/00	2,000	..
7	1980	Do. ..	1989	Do.	1/10	3/70	15,000	..
8	1981	Vadakadu	1990	Do.	0/45	1/35	2,000	..
9	Do.	Alivalam	1991	Do.	0/5	3/25	2,000	..
10	1982	No. 19, channel	1992	Do.	0/00	0/50	1,000	..
						Total..	1,85,000	

440. *Quality Class.*—The oldere xisting plantations were severely affected by the 1977 cyclone. The growth of the existing teak stock in Thanjavur Division around Mannargudi, Nagapattinam, Thiruvarur and Nannilam were severely damaged. The present stock of teak is comparable to quality class IV of All-India Quality. However it is too early to come to a conclusion.

441. *Collection of Seeds.*—Required quantity of certified good quality seeds will be obtained from the Geneticist Coimbatore. The average weight of a bag of seed will be about 25 kg. and about 1,800 seeds will weigh a Kilogram. The seeds can be stored upto one year safely in gunny bags. The percentage of germination is about 60 per cent and the plant percentage is about 55 per cent.

442. *Nursery.*—One Central nursery will be raised from which the planting stock can be distributed to all the areas. The cost of watering can be reduced to the minimum by installing mechanised watering devices. A responsible subordinate can look after the nursery for the whole division.

443. Standard nursery beds of size 10 x 1 m. should be formed by picking the soil to a depth of 30 cm. and removing all pebbles, roots tubers and stumps. One fourth cart load of well decomposed farm yard manure is added (say 250 kgs.) after powdering them. The picked and manure mixed bed level is raised to 30 cm. height and sides are supported by pegs and brush wood walls. A dead level is maintained in the bed so that there may not be any water stagnation.

444. An intervening space of 0.50 m. will be left to facilitate nursery workers to move about between the nursery beds, for watering weeding etc., The nursery will be fenced all round.

445. *Sowing and other Nursery Operations.*—Certified viable Teak seeds will be sown at the rate of 5 kg. per bed during April. The seeds will be evenly spread on the bedand fine earth will be spread over the seeds to a thickness equ l to the thickness of the seeds. The entire bed will be covered by straw and carefully watered both in themorning and in the evening on all non-rainy days. The straw cover will be carefully removed soon after noticing the germination. The exposed seeds if any should be carefully pushed down. As Tectona grandis is a strong light demander care should be taken to see that there is no over hanging shadows. One standard bed is just sufficient to supply good healthy virulant seedlings for planting 1 ha or 1 km. of avenue or canal bank plantations including beating up of casualties. The weeds should be removed as and when noticed. The nursery should be cleaned and kept neat and tidy at all times. It is essential to raise seedlings of uniform height right from the beginning which can be achieved by removing the wolves if any in the nursery.

446. *Preparation of Stumps.*—One year old teak stumps with a diameter range of 1.5 to 2 cm. thick at the collar give the best results. Two year old teak stumps can also be used provided if they are of the prescribed size. The nursery beds should be watered well, before the seedlings are pulled out for stump preparation. Removal of the healthy seedlings should commence from

one end of the bed and systematically proceeded towards the other end. The plants should be removed one by one by holding them as near the ground as possible by loosening the soil with a pick are and gently pulling them out when necessary. The backward plants should be left and the beds should be remade was watered so that the backward plants left in the bed will shoot up and will become ready for casuality replacement in the same year.

447. Sharp knives should be used in the preparation of the stumps. All the lateral root lets should be trimmed off flush with the tap root. A sharp plant cut without disturbing the bark should be given at about 2 Cms. above the coller region and 22 Cms. below in the root portion so that the over all length of the stump is slightly dipped. In luckwarm wax solution so as to prevent the shoot from quick drying fungal attack and decay.

Section 5—Survey and Demarcation.

448. The areas to be planted in a particular year should be inspected one year in advance and the portions which are susceptible to submersion during the flood should be marked out. The soil suitablity for planting teak should be fixed in advance and the nursery planned accordingly. Wherever there is encroachment, Public Works Department should be addressed sufficiently-early so that all encroachments and such other hundles will be cleared by them enabling easy planting in time. The area selected should be surveyed and demarcated.

449. *Clearing the Area.*—All value less growth and thorny bushes should be cut and removed and this should be completed before the end of May.

450. *Aligning and Staking.*—The area should aligned at an espacement of 2m. x 2m. and staked with 60 Cm. long stakes. This work should be completed before the end of June. In the case of planting on the banks of channels aligning should be done on the middle of the outer slope of the bund.

451. *Planting.*—The stumps prepared at the nursery as explained above should be transported to the planting site without less of time packed in wet gunny bags and planted in crew bar holes at the rate of one stump per hold at the aligned spots. Vertical crowbar holes should be made just sufficient to plant the stump flush with the ground. The stump planted hold should be tightly packed with air so that no air space is left in it.

452. Planting should be done soon after water is let into the Cauvery system from Mettur Reservoir. Original planting should be done always on one definite side of the stake and the replacements on the other. The spicies recommended for planting in different type of soil are furnished in Appendix No. IV.

453. *Watering.*—Soon after planting, watering will be done to each seeding on alternate days with one pot of water (about 10 litres) for the first 20 days from the date of planting in July and subsequently once in five days, til the out break of monsoon. Watering will be continued during the second year also once a week during the dry spell.

454. *Replacement of Casualities.*—The casualities will be beaten up as and when noticed so as to ensure full stocking during the first year it self. During the second year the casualities will be placed with large size stumps utilising the services of plot mazdoor provided that the failure was not due to swampy conditions or poor choice of site.

455. *Drainage.*—Drainage is essential for Tectona grandis. It so happens that Tectona grandis gets dam ped off in patches during the heavy and incessant rains which may lead to decay of the stumps especially the newly planted onces. Therefore it is very essential to release the stagnating water from the plant by the plot mazdoors. Frequently inspections will be more effective in this case.

SECTION 6—SUBSIDIARY SILVICULTURAL OPERATIONS.

456. The weedings and soil workings will be done during July, August and December. January weeding will consist of up rooting all grass creepers and harbaceous plants to a radious of 60 Cms. from the seedlings. Climbers should be up rooted as far as possible during the first two weedings. The soil around the plant will be thoroughly worked to a depth of 15 Cms and to a radius of 60 Cms. without causing damage to the seedlings or the root system.

457. The same operation will also be carried out during the second year viz., weeding and soil working during July, August, December and January. These seedlings which have been damaged by cattle, wind, Fire or by such other causes should be cut back with one sweep at ground level with the sharp bill book. The cut should be a slanting one. In case if double and more leaders are noticed it should be reduced to single leader. A general pruning and debudding is carried out over the entire plantations upto a height of 2 m along with weeding and soil working. The debudding operation will consist of removal of tender lateral branches and buds by hand. Resorting to the use of bill books should be avoided in this operation. The debudding operations should be done early before the lateral branches or shoots become woody. Either coal tar or red soil should be applied to ward off fungus attack.

458. During the third year pruning and climber cutting operatings should be done to all teak plants along with cutting back of damaged plants.

459. *Further maintenance of plantations.*—The plantations will not be handed over to the P.W.D., but action should be taken to get them notified under section 26 of Tamil Nadu Forest Act V of 1882 as done in the case of Avenue plantations in Madurai Distict.

460. *Thinings.*—Tectona grandis avenue plantations are to be called as canal bank plantations. Since the plants are planted at closer espacement, it is by thinning only the development of good bole is achieved . Hence the to avoid congestion in the crown the first thinning is done at the age of 6 years by removing alteranate plants mechanically. The second mechanical-*cum*-silvicultural thinning will be done at the age of 15 years by carefully retaining healthy straight cylindrical, disease resistant stems with good shape. Selective thinning will be done at the age of 30 years as provided in the thinning schedule. In no case the thinning should be done after that age.

461. The thinning schedule should be followed scrupuloulsy unless the District Forest Officer considers it fit to postpone the thinning for valid reasons, subject to the approval of the Conservator of Forests.

462. *Marking rules.*—Marking for improvement fellings will be done by the District Forest Officer orby his gazetted assistant. Every tree to be removed willbe marked withtheOfficer's personal hammer at a basal blaze so that the authority for its removal will be apparent even after the tree is felled and removed. Felling of marked trees should follow closely on the marking itself so that the marking officer can immediately see for himsely the result of marking.

The following guidelines are prescribed for carrying out thinning.

(*a*) Dead dying and diseased trees will be marked.

(*b*) Unsound trees provided they are silviculturally available.

(*c*) Badly shaped trees provided their removal will benefit trees of letter form—

(*d*) Thinning congested groups of pole crop and advance growth.

(*e*) Cutting back of mal formed shoots in order to get now coppice shoots of better form. Complete overhead light is essential for the development of coppice shoots.

(*f*) Removal of less valuable stems in favour of more valuable stems.

463. The followings will be carried out along the thinning—

(1) Removal of lasterals by lopping the side branches.

(2) Clumber cutting, etc., should be done along wtih markings for fellings.

(3) Along with thinning prunning of side branches will be carried out. Prunning should be confined to 1/3 to 1/2 of the total height of the tree. Sharp implement should be used for purnning the branches flush with the stem collar or coppice fungicide paste will be applied, to the cut ends to ward off rots and fungal attack.

464. *Thinning Programme.*—The following statement gives detailes of the areas to be thinned during the period of this plan.

STATEMENT SHOWING THE TEAK PLANTATIONS TO BE THINNED IN THANJAVUR FOREST DIVISION.

(a) Thanjavur Range.

Serial number.	*Year and name of plantation.*	*Area in ha.*	*Year of thinning in 6th year.*	*Year of thinning n 15th year.*	*Year of thinning 30th year.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	1982 Sullanar Bit I	30	1988	..	..	..
2	1982 Sullanar Bit II	30	Do.	..	..	..
3	1982 Anantha cauvery	30	Do.	..	..	..
4	1982 Kulamangalam	30	1988	..	..	..
5	1981 Neivasal Thenparai 3rd ..	30	1987	..	..	..
6	1980 Kattalai High level chanel ..	24	1986	..	..	..
7	1980 Chakkarai Vaikkal	24	Do.	..	..	..
8	1979 Konakodungal	24	1985	..	..	..
9	1978 Kongan Vaikal	60	1984	1993	..	..
10	1976 Konakadungai	72	..	1991	..	..
11	1976 Kuthadi channel	36	..	Do.	..	..
12	1976 Soorudaiyan	30	..	Do.	..	..

(b) Pattukkottai Range.

Serial number.	*Year and name of plantation.*	*Area in ha.*	*Year of thinning in 15th Year.*	*Year of thinning 30th year.*	*Year of thinning 30th Year.*	*Remarks.*
1	1974 Kalyana Odai	60	1984	1989	..	..
2	1978 Kalyanaodai	30	Do.	1993	..	..
3	1979 Kalyanaodai	30	1985	..	..	..
4	1980 Pudupattinam	60	1986	..	..	..
5	1981 Pudupattinam	60	1987	..	..	..
6	1981 Kalyanaodai	60	Do.	..	..	..
7	1982 No. 18 channel	60	1988	..	..	..
8	1982 Regunramasamudram ..	42	Do.	..	..	..
9	1982 No. 19 channel	30	Do.	..	..	..

(c) Sirkali Range.

Serial number.	*Year of plantation and locality.*	*Year of thinning.*	*Year of thinning.*	*Year of thinning.*	*Area in ha.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	1970 Cauvery	..	1985	..	45	..
2	1971 Govinda cauvery	..	1986	..	45	..
3	1971 Thirunagari	..	Do.	..	35	..
4	1972 Manjalar	..	1987	..	65	..
5	1973 Coleroon	..	1988	..	60	..
6	1973 Mahimalayar	..	Do.	..	[illegible]	..
7	1973 Mahimalayar	..	Do.	..	24	..
8	1974 Manjalar	..	1989	..	70	..
9	1974 Palavar Bit I	..	Do.	..	70	..
10	1974 Palavar Bit II	..	Do	..	70	..

(c) *Sirkali Range—cont.*

Serial number.	Year of plantation and locality.	Year of thinning 6th year.	Second thinning 15th year.	Third thinning 30th year.	Area in ha.	Remarks
(1)	(2)	(3)	(4)	(5)	(6)	(7)
11	1975 Palavar Bit	..	1990	..	60	..
12	1975 Palavar Bit II	..	Do.	..	40	..
13	1975 Rajendran	..	Do.	..	40	..
14	1976 Oddai0ar	..	1991	..	100	..
15	1976 Nanodaiyar	..	Do.	..	40	..
16	1977 Thirunarayar Bit I	..	1992	..	40	..
17	1977 Thirunagar Bit II	1993	1992	..	60	..
18	1978 Manikarnaigaiar	1984	1993	..	30	..
19	1979 Manikarnaigaiar	1985	1994	..	30	..
20	1979 D. Manniar	1985	Do.	..	30	..
21	1979 Poraivaikkal	1985	Do.	..	..	..
22	1981 Kondathur manivaikkal	..	1983	..	60	..
23	1981 Kondathur vaikkal	1983	1996	..	..	..
24	1981 Umayar Pathi Bit I	1987	Do.	..	72	..
25	1981 Umayar Pathi Bit II	1987	Do.	..	72	..
26	1981 Alangadurapakkam	1987	..	..	72	..

(d) *Mannargudi Range.*

Serial number.	Year of plantation and locality.	Year of thinning 6th year.	Second thinning 15th year.	Third thinning 30th year.	Area in ha.	Remarks
1	1970 Palavanar	..	1985	..	38	..
2	1970 Hrichandra nathi	..	Do.	..	64	..
3	1971 Adappar Bit II	..	1986	..	60	..
4	1973 Vattacheri main channel	..	1988	..	60	..
5	1974 Koraiyar	..	1989	..	64	..
6	1975 Koraiyar	..	1990	..	60	..
7	1976 Koraiyar	..	1991	..	48	..
8	1976 Kannanaru	..	Do.	..	60	..
9	1978 Paminiar	..	1993	..	30	..
10	1978 Moovanallur channel	..	Do.	..	48	..
11	1978 Koraiyar	..	Do.	..	49	..
12	1979 Ayyanar (Gap planting)	1985	..	..	30	..
13	1979 Agamananaru	Do.	..	..	42	..
14	1979 Palaiyur main channel	Do.	..	..	30	..
15	1979 Valavar mainchannel	Do.	..	..	54	..
16	1980 Koraiyar	1986	..	..	102 ha	..

Serial number.	Year of plantation and locality.	Year of thinning 6th year.	Second thinning 15th year.	Third thinning 30th year.	Area in hectare	Remarks.
(1)	(2)	(3)	(4)	(5)	(6)	(7)

(d) *MannaragudI Range—cont.*

17	1980 Koraiyar (Gap planting) ..	1986	..	..	66	..
18	1980 Vadavar Extension channel.(Gap)	Do.	..	..	30	..
19	1981 Koraiyar (Gap)	1987	..	..	42	..
20	1981 Paminiar (Gap)	Do.	..	..	30	..
21	1981 Vadavar Extension channel (Gap).	Do.	..	..	42	..
22	1981 Koraiyar	Do.	..	..	42	..
23	1982 Kcraiyar	1988	..	..	30	..
24	1982 Illupadi Vaikal	Do.	..	..	30	..
25	1982 Old Vadavar	Do.	..	..	30 30	.. ..
26	1982 Thenparai vaikal	Do,	..	..	30	..

(e) *Kumbakonam Range.*

Serial number.	Year of plantation and locality.	Year of thinning 6th year.	II 15 year.	III 30th year.	Area in hectare	Remarks.
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	1970 Nattar	..	1985	..	40	..
2	1970 Vanjiyar	..	Do.	..	20	..
3	1971 Manniyar	..	1986	..	40	..
4	1971 Vanjiyar	..	Do.	..	40	...
5	1972 Nandalar Bit I and II ..	..	1987	..	120	..
6	1973 Nandalar Bit I and II ..	..	1988	..	104	..
7	1973 Mottiyar	..	Do.	..	24	..
8	1974 Palavar	..	1989	..	60	..
9	1974 Nattar	..	Do.	..	24	..
10	1974 Nattar	..	Do.	..	20	..
11	1974 Idyar Bit I and II ..	..	Do.	..	84	..
12	1975 South Puthar	..	1990	..	60	..
13	1975 Puthar	..	Do.	..	60	..
14	1975 Sullanar	..	Do.	..	40	..
15	1976 Puthar	..	1991	..	90	..
16	1976 Vadakoraiyar I	..	Do.	..	60	..
17	1977 Pudumanniyar	1983	1992	..	12	..
18	1977 Parisalpoki	Do.	Do.	..	24	..

Serial number. (1)	Year of plantation and locality. (2)	Year of thinning 6th year. (3)	Second thinning 15thyer. (4)	Third thinning 30th year. (5)	Area in hectare. (6)	Remarks. (7)
	(e) Kumbakonam Range—cont.					
19	1977 Narimanniyar	1983	1992	..	42	..
20	1977 Aliyanar	Do.	Do.	..	60	..
21	1977 Koraiyar	Do.	Do.	..	42	..
22	1977 Kalisalar	Do.	Do.	..	60	..
23	1978 Kuduvaiyar	1984	1993	..	60	..
24	1978 Thirumalairajan ..	Do.	Do.	..	84	...
25	1978 Beeman vaikkal	Do.	Do.	..	42	..
26	1978 Manalar	Do.	..	..	60	...
27	1979 Semagudi voikal ..	..	..	..	60	...
28	1979 Odai, Kanidayan, Pallavan Ammaiappanavaikkal ..	..	1985	..	54	...
29	1979 Kattur	1985	..	..	73	...
30	1979 Kottur	Do.	..	..	36	..
31	1979 Thirusankatangudi	Do.	..	..	30	..
32	1980 Thenkoraiyar	1986	..	..	42	..
33	1980 Vettar	Do.	..	..	60	...
34	1981 Beeman, Ottai vaikal ..	1987	..	..	48	Miscel-laneous.
35	1981 Pandavaiyar	Do.	..	..	48	..
36	1981 Kangayam pular ..	Do.	..	..	54	..
37	1981 Vettar	Do.	..	..	60	—
38	1982 Pandavaiyar	1988	..	..	60	..
39	1982 Konavaikkal	Do.	..	..	42	..

ABSTRACT

	HECTARES.
Thanjavur	414
Pattukottai	432
Mannargudi	1248
Sirkali	1,265
Kumbakonam	2,020
Total	5,379

465. *Thinning compact plantations.*—(1) Older plantations raised between 1957-61 in Thanjavur Division over compact areas training from 0.26 to 6o ha. have to be thinned during their 30th year of planting.

(2) While marking tectiona grandis should receive preference over the other species, but good stems of Rosewood, Vengai, Karumarudam should not sacrificed for a poor stem of teak.

(3) Suppressed stems of miscellaneous species and their sapplings should also be cut when they interfere with teak.

(4) Trees right on the river or canal bank should be retained as a soil conservation measure.

(5) Climber cutting and removal of parasites on trees should precede every thinning observation. the marking Officer should ensure that this operation has been carried out properly before he commences marking. Parasites should be destroyed by burning.

(6) Irrespective of grades of thinning all dead dying and meribend trees should be removed during the course of any silvicultural thinning.

(7) Marking of miscellaneous patches within the Teak Plantation should also be done along with teak adopting the same intensity of thinning. No removal the same intensity of thinning.

(8) No removal should cause a lasting gap in the canophy.

(9) As there is no thinning after the 30th year the stems to be retained after final thinning will be the stems required for the final crop. Plus 10 per cent to allow for natural loss between the final thinning and the rotation age.

(10) Along with the final thinning the pruning of the side branches to 1/3 of the height of the crown will be carried out as described in the provious paragraph.

466. Thinning Programme in Compact Plantations.

STATEMENT OF III THINNING TO BE CARRIED OUT IN CONTRACT PLANTATION OF THANJAVUR FOREST DIVISION.

(a) Kumbakonam Range.

Serial number.	*Year of planta-tion.*	*Locality.*	*Year of III thining 30th year.*	*Area in hectares.*	*Total.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	1960	Sarakkai	1970	2.83	..	..
2	1961	Enanallur Bit I	1991	0.44	..	..
3	Do.	Enanallur Bit II	Do.	0.61	..	..
4	Do.	Enanallur Bit III	Do.	0.38	..	..
5	Do.	Dhandalam	Do.	1.21	1.21	..
6	Do.	Nachiyarkoil Bit I	Do.	0.40		..
7	Do.	Nachiyarkoil Bit II	Do.	0.28	0.68	..
8	Do.	Villianvarambal	Do.	00.26		..
	Do.	Villianvarambal	Do.	0.40	2.36	..
10	Do.	Sembiavambal Bit III ..	Do.	1.70		
			Total ..	8.51	8.51	

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(b) Compact plantations in Thanjavur Range.

Serial number.	*Year of plantation.*	*Locality.*	*Year of III thinning 30th year.*	*Area in hectares.*	*Total.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	1959	Kalyanapuram	1989	1.41	1.41	..
2	Do.	Perumpuliyur	Do.	0.77	0.77	..
3	1958	Hechannur	1988	0.91	0.91	..
4	Do.	Vedugagudi	Do.	0.61	0.61	..
5	1957	Nadu Cauvery Bit I	1987	0.61	..	..
6	Do.	Nadu Cauvery Bit II	Do.	1.21	..	..
7	Do.	Vennarpadugai	Do.	2.22	2.22	..
8	Do.	Rajagiri	Do.	0.50	0.50	..
9	Do.	Agarapettai	Do.	0.70	0.70	..
10	Do.	Thogul	Do.	6.68	6.68	..
11	Do.	Mahadevapuram	Do.	6.27	6.27	...
12	1958	Thiruchirampoondi	1988	0.01	1.01	..
			Total ..	24.52	24.52	

467. *Control.*—The control forms prescribed for this working circle are given in appeandix No. XIX A and will be posted every year by the District Forest Officer.

CHAPTER III

FUEL WORKING CIRCLE.

Section I—General Constitution and object of Management.

468. This working circle covers all the existing Farm Forestry Plantations, and areas proposed to be planted under Social Forestry Scheme.

469. The object of management is to increase the Forest Resources out side the Forest limits with a view to increase the supply of small timber, Firewood, Fodder Green manure leaf, etc.

470. According to the National Forest Policy of India enunciated in the year 1952 one-third of the available land area should be kept under Forest cover. But the percentage of land area under Forest cover in Tamil Nadu is as low as 16.2 per cent as against the optimum level. This District being granary of Tamil Nadu, areas, fir for cultivation is made use of to the last inch. Besides the existing land scarcity there is also an unquenched thirst for land. The area which are not fit for cultivation not only fall short which serve only poor grazing ground to be the poor village cattle.

471. The only means, to meet the growing, needs of general public such as firewood, and particulars to the agricultural population, green manure leaf, small timber for agricultural implements, fencing material, fodder, etc., is to increase the forest resources outside the forest areas such as Tank foreshores, canal banks and other waste lands.

472. The object of this working circle can be broadly classified as follows:—

(i) To meet the requirement of the villagers in respect of Forest Produce predominantly fuel.

(ii) To divert cowdung to the fields as manure.

(iii) To aid soil and moisture conservation measures.

(iv) Increase the total area under forest cover.

(v) To increase the employment potential.

Section 2—Division of the area :—

473. The total area of the Fuel working circle both under East and west Thanjore District is 5690.57 ha.

474. East Tanjore District comprising of Mannargudi, Needamangalam, Thiruthuraipoondi, Vedaranyam, Sirkali, Poraiyar, Thiruvarur, Nannilam, Nagapattinam, Kodavasal and Mayiladuthurai Taluks will be controlled by the District with Forest Officer, Tanjore District headquarters at Nagapattinam Vide C.C.F. Ref.

475. The remaining nine taluks of the District (1) Pattukottai, (2) Peravoorani, (3) Orthanadu, (4) Tanjore, (5) Thiruvaiyar, (6) Papanasam, (7) Valangaiman, (8) Thiruvidaimarudur and Kumbakonam will be controlled by the Divisional Forest Officer, Social Forestry Division at Tanjore.

476. The details of the existing plantations and area available for future plantating is furnished below Talukwise :—

Serial number.	Name of the Range.	Existing plantation in heactres.	Division of the area. Proposed area for planting in hectares.	Total.	Remarks.
1	Thanjavur	511.71	1,632.72	2,144.43	
2	Pattukottai	718.70	713.23	1,431.93	
3	Peravoorani	426.80	689.84	1,116.84	
4	Orthanadu	450.38	507.19	957.57	
5	Mannargudi	40.00	—	40.00	
	Grand total ..	2,147.59	3,542.98	5,690.57	

LIST OF EXISTING FARM FORESTRY PLANTATION THANJAVUR SIDAA DIVISION

(a) *Thanjavur Range.*

Serial number and name of the plantation.	*Year.*	*Area in hectare.*	*Species.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)
1 Sukkudi Eri	1973	30.00	Babul ..	Taken charge from Thanjavur Territorial Division on 31st May 1982.
2 Aramundan Eri	Do.	12.21	Do.	Do.
3 Egapuri REri	Do.	24.00	Do.	Do.
4 Naduva Eri	Do.	20.00	Do.	Do.
5 Moolakudi Eri	Do.	37.00	Do.	Do.
6 Achanpatti Eri	1981	24.20	Do.	Taken charge from the Fuel Wood Division, Ariyalur on 21st May 1982
7 Palayapatti Eri	Do.	21.60	Do.	Do.
8 Munian Eri	Do.	20.70	Do.	Do.
9 Kadattipatti Eri	Do.	16.71	Do.	Do.
10 Aramundan Eri	Do.	14.15	Do.	Do.
11 Kalar alias Samban Eri	Do.	9.20	Do.	Do.
12 Andan Eri	Do.	13.73	Do.	Do.
13 Valambakudi Eri	Do.	11.16	Do.	Do.
14 Karamba Eri	Do.	20.31	Do.	Do.
15 Ela Eri	Do.	8.40	Do.	Do.
16 Ayyanavaram Eri dam	Do.	26.50	Do.	Taken charge from Territorial Division, Thanjavur on 22nd May 1982.
17 Sayakudi Eri	Do.	50.00	Do.	Do.
18 Alagakudi Eri	Do.	8.70	Do.	Do.
19 Marundakudi Peria Eri ..	1982	6.20	Do.	....
20 Maruthakudi Pudu Eri ..	Do.	19.50	Do.	....
21 Chellappanpettai Pethamaran Eri	Do.	19.00	Do.	....
22 Pagadaikudi Eri	Do.	12.4	Do.	....
23 Cherandi Eri	Do.	18.4	Do.	....
24 Pala Eri	Do.	16.00	Babul F.H. Velvelan	....
25 Bemanpatti Eri	Do.	7.5	Babul	....
26 Karari Eri	Do.	40.15	Do.	....
27 Navia Eri	Do.	4.98	Do.	....
		511.77		

(b) *Pattukottai Range.*

1 Pannavayal Eri	1973	50.00	Babul	Taken charge from Thanjavur Territorial Division, on 31st May 1982.
2 Kargavayal Eri	1974	75.00	Do.	.... Do.
3 Kurichi Eri	Do.	75.00	Do.	Do.

(*b*) Pattukottai *Range*—cont.

Serial number and name of the plantation.	*Year.*	*Area in hectare.*	*Species.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)
4 Pannavayal Eri	1975	50.00	Babul	Taken charge from Thanjavur Territorial division on 31st May 1982.
5 Sandakottai Eri	Do.	75.00	Do.	Do.
6 Sellikurichi Eri	1979	124.50	Do.	Do.
7 Soorapallam Eri	1980	30.00	Do.	Do.
8 Naduvikottai tank	1982	15.20	Do.	Do.
9 Alivalam tank	Do.	29.20	Babul, Perambai Velvelan, Odai.	Do.
10 Palathali tank	Do.	15.60	Babul	....
11 Panikattuvayal tank	Do.	18.73	Do.	....
12 Seethambalpuram tank	Do.	8.00	Babul E.H.	....
13 Arayankulam tank	Do.	7.30	Babul	....
14 Vallathikottai tank	Do.	29.37	Babul, Perambai	....
15 Ottangadu tank	Do.	23.13	Babul, Velvelan	....
16 Punavasal tank	Do.	7.67	Babul	....
17 Pallathur tank	Do.	3.50	Do.	....
18 Nainakulam tank	Do.	5.00	Do.	....
19 Ettivayal tank	Do.	17.20	Do.	....
20 Periyakottai tank	Do.	39.30	Babul, Velvelan	....

(c) *Orthanadu Range.*

1 Aramulai Eri	1980	48.30	Babul	Taken charge from Thanjavur Territorial Division on 31st May 1983.
2 Athambai Eri	Do.	87.00	Do.	....
3 Athambadi Sitheri	1981	35.00	Do.	....
4 Karimuthu Eri	1982	5.40	Do.	....
5 Ponneri	Do.	28.00	Do.	....
6 Kulamangalam Eri	Do.	..	....	....
7 Velleyan Eri	Do.	16.00	....	....
8 Siruthalai Eri	Do.	13.8	Babul	....
9 Mayil Eri	Do.	13.00	Do.	....
10 Valluvakudi Eri	Do.	10.00	Do.	....
11 Thoppuviduthi	Do.	13.60	Do.	....
12 Unjividuthi Eri	Do.	12.00	Do.	....
13 Kodikarambai Eri	Do.	18.30	Do.	....
14 Panikondan Eri	Do.	33.30	Babul E.H.	
15 Solankulam Eri	Ko.	6.40	Babul	....
16 Balaramankulam Eri	Do.	5.00	Do.	....
17 Navalikulam Eri	Do.	42.8	Do.	....
18 Madapallikkulam	Do.	44.48	Do.	....
19 Kadapalli Eri	Do.	18.00	Do.	....
		450.38		

(d) *Peravurani Range.*

Serial number and name of the plantation.	Year.	Area in hectare.	Species.	Remarks.
(1)	(2)	(3)	(4)	(5)
1 Avanam	1980	60·00	Babul	Takan charge from the Territorial Division Thanjavur on 29th June 1982.
2 Ayyankulam	Do.	25.00	Do.	Do.
3 Kandikulam	1981	35.50	Do.	Do.
4 Umathanadu tank	1982	90.00	Babul, Velvelan ..	....
5 Korathoor tank	Do.	36.80	Babul	....
6 Rettavayal tank	Do.	38.50	Babul, Velvelan ..	....
7 Solaikadu tank	Do.	35.00	Babul	....
8 Kalyanaramanathapuram tank ..	Do.	106.00	Babul, Velvelan ..	....

(e) *Mannargudi Range.*

1 Thulasindrapuram	1975	40	Babul	East Thanjavur.

ABSTRACT

	Hectare
1 Thanjavur	511.71
2 Pattukottai	718.70
3 Orathanadu	450.38
4 Peravurani	426.80
5 Mannargudi	40.00
Total ..	2,147.59

477. Area available for future Planting.

LIST OF TANKS.

(a) *Thanjavur Taluk.*

Serial number and Name of taluk.	S. F. Number.	Total area of the tank in Hectares.	Area available in Hectares.	Remarks.
(1)	(2)	(3)	(4)	(5)
1 Rajan Eri	272	3.57	3.24	..
2 Udayar Eri	375-1	6.95	5.67	..
3 Pachamadai Eri	375-2	4.45	4.05	..
4 Kumara Odai Eri	375-3	6.37	4.86	..
5 Pudu Eri	384	0.76	0.404	..
6 Pudu Eri Kuttai	387	2.23	2.02	..
7 Mamundi Eri	436	6.47	5.67	..
8 Pailapuri Eri	140-2	9.71	8.90	..
9 Ponneri	7-4	35.48	34.40	..
10 Periakeni Eri	114	3.42	3.24	..
11 Annuvathi Eri	205	29.70	28.33	..
12 Thanikaikulam	49	2.91	2.83	..
13 Mandalakulam	34	3.61	3.24	..
14 Vengal Eri	175	3.48	3.24	..

Serial number and Name of the Taluk.	S. F. Number.	Total area of the tank in Hectares.	Area available in Hectares.	Remarks.
(1)	(2)	(3)	(4)	(5)
(a) Thanjavur Taluk—*cont.*				
15 Nanjil Eri	40	6.07	5.67	..
16 Pudukulam	179	1.37	1.21	..
17 Pudu Eri	35	2.10	2.43	..
18 Pudu Eri	37	1.70	1.21	..
19 Aladi Eri	112	5.76	5.66	..
20 Kuthankuli Eri	47	1.45	1.21	..
21 Moongilkulam	43	2.15	2.02	..
22 Pudu Eri	133A	11.45	10.11	..
23 Mamundi Eri	66-1	6.90	6.07	..
24 Vennangudi Eri	172-7A	12.60	12.14	..
25 Samudram Eri	48, 108-2 1317, 1322.	104.30	101.17	..
26 Rengapudayan Eri	104	10.44	8.90	..
27 Kumar Eri	34	22.30	21.04	..
28 Mudalaikurichi Eri	34	4.16	4.04	..
29 Sachaikudi Eri	34	5.98	5.70	..
30 Alayakkudi Eri	36	21.42	20.23	..
31 Pagadakudi Eri	127	12.95	12.14	..
32 Sengalani Eri	38	69.96	69.80	..
33 Kamadenu Mangalam Eri	33	69.75	68.79	..
34 Sembian Eri	33	18.54	17.40	..
35 Kamatchiamman Kulam	33	16.10	15.37	..
36 Muthuveerakandiyanpatti Eri	33	5.24	4.04	..
37 Kurichi Eri	33	15.77	14.16	..
38 Serambadi Eri	33	44.92	44.51	..
39 Veeramarasampettai	138	2.15	2.00	..
40 Velamathiran Eri	138	43.07	43.00	..
41 Rayaran Eri	138	56.33	54.00	..
42 Mathikan Eri	138	35.61	34.39	..
43 Kanakkan Eri	128	2.83	2.02	..
44 Chandiran Mathiram Er	128	2.63	2.02	..
45 Maruthaikudi Peria Eri	129	36.42	30.35	..
46 Kadamban Eri	10	4.85	4.04	..
47 Thondaman Eri	10	33.18	30.35	..
48 Kadakkan Eri	14	19.61	16.18	..
49 Ayyanar Eri	15	30.70	28.32	..
50 Uppiliakkudi Eri	12	7.16	6.07	..
51 Veppangudi Eri	12	0.63	..	..
52 Sengalaneer Eri	431	173.50	161.87	..
53 Vatankurumbun Eri	394	17.64	16.18	..

Serial number and Name of the Taluk. (1)	S.F. Number. (2)	Total area of the tank in Hectares. (3)	Area available in Hectares. (4)	Remarks. (5)
(a) Thanjavur taluk—cont.				
54 Pudukkulam	462-2	9.42	6.07	
55 Solangan Eri	49	4.47	4.05	
56 Kadambankudi Eri	116	9.46	9.10	
57 Mungiladu Eri	161	4.40	4.05	
58 Aladi Eri	273	5.86	4.05	
59 Vinayathukkan Pettai Eri	57	4.66	4.05	
		1,097.07	1,026.27	
(b) Thiruvaiyaru taluk.				
1 Panaveli Eri	56	39.10	16.18	
2 Vadugan Eri	1-1	10.29	6.07	
3 Katteri	220	41.62	20.28	
4 Putharayanallur Eri	174-A-1	33.60	20.23	
(c) Pattukkottai taluk				
1 Andami Peria Eri	102	41.31	36.42	
2 Parakkalakottai Eri	245-1, 246-3, 261, 264, 268, 277.	11.10	8.09	
3 Mahadevapuram Palaya Eri	108	12.53	8.09	
4 Mohoor Eri	180	12.72	8.09	
5 Parasuramanathan Eri	6	6.78	5	
6 Siramelkudi Eri	42	11.86	8.09	
7 Kadanthakudi Eri (Kathiyanodai Eri)	1	30.55	10.11	
8 Thammankulam	129, 130, 131.	21.73	10.11	
9 Vadaverikulam	104	7.62	4.05	
10 Vikarman Eri	43, 247.	16.95	12.14	
11 Karupperi	366	47.74	30.35	
12 Muthulacheri Eri	23	7.05	4.05	
13 Pulankanni Eri	250-1	2.15	20.02	
14 Thatchanodai Eri	1-3, 140-14	6.18	5.00	
15 Palayakottai Eri	81	12.46	8.09	
16 Painkattuvayal Eri	1,100 to 105-1, 107-2 to 119	38.99	25.00	
17 Raman Eri	61-1, 61-2 113-1	9.10	6.07	
18 Thiruvarambadi Eri	100	15.98	12.14	
19 Keelamarichikatti Eri	13-1, 13-2, 16-3, 17-2, 18-2, 206-1, 279-2, 280-2, 281 to 289.	57.37	50.59	
20 Pekkun Eri	81-1	5.026	4.07	
21 Vaduganodai Eri	8	10.7,403	8.09	
22 Ananthagopala Eri	112-1-2	6.0703	2.43	

Serial number and name of the taluk.	*S.F. No.*	*Total area of the tank in hectares.*	*Area available in hectares.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)
(c) Pattukkottai taluk—cont.				
23 Sundaram Eri	43	40.11	25	
24 Parangikottai Eri	1-1	9.32	5	..
25 Karisavayal Kulam	29-1, 29-2	14.19	8	..
26 Elangadu Eri	26-2 178-2	6.7	5	.
27 Parasuramenthal	6	7.78	5	..
28 Vendakkottai Eri	39.89	20.25	10	..
29 Neivarviduthy Eri	9	22.27	12	..
30 Ennami Vayal	29-1, 29-2	4.54	2	..
31 Anantheswarapuram Vannankulam ..	13-1, 13-2, 13-3	21.49	10	..
32 Nettodaikulam	20-3	17.52	5	..
33 Ettivayal				
34 Kadambakulam	50-3, 53-3, 54	12.51	5	..
35 Pudirivayal	4-1, 4-2, 4-3, 444	6.31	2	..
36 Velavedikulam	138-1, to 138-6 139-1, 140-1.	3.96	2	..
37 Thandamarikulam	7, 19	3.59	2	..
38 Kallivayakulam	1	25.14	15	..
39 Velanpudukulam	27-1, 109-1,2 109-2, 109-3, 111-1,2—3-4, 113-1,2.	7.61	4,046	
40 Eripurakkarai Peria Eri	135-4	50.10	40.468	..
41 Valayarkulam	60-1	14.40	10.1171	..
42 Sirupalakulam	61-2, 3, 4, 6, 7.	14.90	10.1171	..
43 Thittagudi Ottai Eri	216 to 221	8.76	6.070	..
44 Eralivayal Kulam	31	6.195	2.023	..
45 Kuthavayal Peria Eri	1-2, 1-3, 1-4	39.92	20.23	..
46 Kurichi Eri	1-1	163.74	40.46	..
47 Amerikulam	3-1, 3-2	68.31	40.46	..
48 Palamuthi Nawalodai Kulam	50	12.73	4.04	..
49 Neivaviduthi Eri	8	22,27	20.23	..
50 Kallavayal Eri	62	14.49	10.11	..
51 Pillakuli Eri	26	15.98	6·07	..
52 Nedukulam Eri	243-1,2, 244-1,2, 245-1,2, 246-1,2,	7.33	4.05	..
53 Velugankulam	22	11.08	4.05	..
54 Ottangadu Peria Kulam	123	49.14	Planted.	
55 Thani Eri	208-1	11.24	5.0	..
56 Chinna Auvudayar Koil Peria Eri ..	95-3	41.66	16.9	..
57 Parayankulam	4-2	19·00	10.12	..

Serial number and name of the taluk.	S.F. No.	Total area of the tank in hectares.	Area available in hectares.	Remarks.
(1)	(2)	(3)	(4)	(5)
	(d) *Peravurani taluk.*			
1 Pinnavasal kulam	1A, 1E, 84F	193.01	60.0	..
2 Chilkathikadu	1A, to D, 157	22.57	15.0	..
3 Kalyanarama puram Perumagalur Tank	161-204A	155.80	100.0	..
4 Kallakulam	54-1	11.42	4.05	..
5 Rettavayal Eri	1	67.92	20.24	..
6 Rettakulam Eri	2	10.22	4.05	..
7 Veerakkudi Eri	1-2	40.90	16.19	..
8 Adanoor Eri	8-1, 8-2	41.40	10.12	..
9 Panancheri Kulam	11-2	31.678	12.15	..
10 Kurunjakulam	174-1, 174-2	24.18	12.15	..
11 Pudukkulam	301 to 309	16.07	12.15	..
12 Nattanikottai	49	20.89	12.14	..
13 Peravurani Eri	1-1, 1-2, 123-1, 2, 3, 361-1	21.46	16.19	..
14 Saithankulam	201	19.67	4.046	..
15 Sinnavengakulam	356	31.57	10.11	..
16 Periyavengakulam	338-2	13.74	10.11	..
17 Anaikulam	567	10.61	8.0	..
18 Athalur Tank	41-2	2.98	2.0	..
19 Tennangudi peria Eri	38	23.10	10.11	..
20 Arasalankarambai	1	22.27	5.0	..
21 Katturanikadu Eri	91-2, 92-1, 92-3, 93-1 to 93-3.	4.54	2.02	..
22 Kulakkudi Eri	19-41-1A, 41-2, 161.	28.45	16.18	..
23 Chinna Arasalam Karambaikulam	19-1A, 1B, 1C.	10.85	4.05	..
24 Ullikulam	7-7	5.67	4.05	..
25 Palakulam	6-3, 6-4,	6.08	4.05	..
26 Nayakathayavayal kulam	20	7.82	6.07	..
27 Veeraiyankottai Periyakulam	367	54.78	20.23	..
28 Nalliyadikulam	108	8.44	4.05	..
29 Ettiranikulam	511 to 516	13.90	12.14	..
30 Nadiyan Eri	36-2	50.63	20.23	..
31 Villunivayal Eri	1	16.90	12.14	..
32 Siruvalakadu Peria Eri	40-1	17.94	10.11	..
33 Kalanivasal tank	1-2	35.06	24.28	..
34 Kollankarambai Eri	1	18.55	6.07	..
35 Karayan vayal Eri	71-3	17.20	5.0	..
36 Pethanachivayal Eri	55	8.70	7.28	..
37 Kottaikulam Eri	5	28.59	20.23	..
38 Perambodi kulam	77	31.55	20.23	..
39 Kuruvikarambai Peria Eri	172-1-3	44.41	20.23	..

Serial number and name of the Taluk. (1)		S.F. Number. (2)	Total area of the tank in Hectares. (3)	Area available in Hectares. (4)	Remarks. (5)
	(d) Peravurani taluk—cont.				
40	Kavivinaivayal Eri	4	17.56	12.0	
41	Valayanvayal Eri	64	6.11	4.05	
42	Solakadu Peria Eri	21-2	41.60	10.11	
43	Vilankulam Pudukkulam	209-1A	12.93	6.07	
44	Senthalaivayalkulam	1-2	23.20	4.05	
45	Ruthrachinthamani kulam	71	15.70	5.0	
46	Palukkadu Eri	128-1-2	42.03	10.0	
47	Perumadathan Eri	28-1B	26.67	5.0	
48	Ariyakkottai Thevar Eri	2-27	14.13	5.0	
49	Perumadathan Eri	21, 28-1B	26.67	5.0	
50	Panrikulam Periakulam	19-1 to 19-7	39.18	10.0	
51	Thurankudi	3-1-A, 1-B, c-C.	9.66	5.0	
52	Avidaiyarkottai Periakulam	1-1, 1-2, 1-3	41.03	10.11	
	(e) *Orathanadu taluk.*				
1	Ponneri	55	31.77	20.23	
2	Vedanayakipuram	1	14.17	10.0	
3	Kinnerikulam Eri	131	32.17	20.24	
4	Pulungudi Eri	84176	25.41	20.23	
5	Lakkuchar Eri	8	13.76	8.09	
6	Krishna Eri	60	30.64	20.23	
7	Perumal Eri	25	8.33	6.07	
8	Maiyileri	169	35.61	20.23	
9	Sillathur Eri	421-1	59.12	40.46	
10	Kalimuthukulam	33-2	17.56	8.09	
11	Pinneri and Semban Eri	29-1 to 7 and 345	2 0.37	10.11	
12	Vedhapuri eri	231	8.92	4.04	
13	Manthanaikulam	295	4.191	4.04	
14	Sengalodaikulam	119-3	10.50	6.07	
15	Krishnapuram Eri	38	19.75	15.0	
16	Krishnapuram Eri	56	6.63	5.0	
17	Pagal sillathur Eri	23	21.43	15.0	
18	Pagal Sillathur Eri	143	5.21	5.0	
19	Sennia Viduthi Pudukulam	1	18.73	10.11	
20	Arunaltheri	82	58.30	40.46	
21	Parantham Pallam kulam	1-3	20.80	10.11	
22	Siramelgudi Eri	54	17.20	10.11	
23	Aathimandapam Eri	55-1	17.52	10.11	
24	Pathuvoodai kulam	72-1	14.24	8.09	
25	Veeranar Eri	167	21.04	10.11	

Serial number and Name of the Taluk.	S.F. Number.	Total area of the tank in Hectars.	Area available in Hectars.	Remarks.
(1)	(2)	(3)	(4)	(5)
(e) Orthanadu taluk—cont.				
26 Vadakku Eri	16	13.92	8.09	
27 Mokkudi Eri	35	12.14	6.07	
28 Palamputhur Pudukkulam Eri	123-1	10.11	4.05	
29 Panayakulam	88	30.35	20.23	
30 Sokkan Eri	131	10.28	6.07	
31 Mela Eri	107	34.93	20.23	
32 Thirumatheri	177	132.80	101.17	
33 Vellurkulam	392-1	7.36	4.05	
	Total	785.24	507.19	
(f) *Mannargudi taluk*				
1 Vaduvoor	351	127.47	111.289	
2 Edamalaiyur Kudi thangi Eri	81	26.30	19.40	
3 Pommankauni Eri	421, 451	12.66	10.00	
4 Moovanallur Eri	44	12.85	10.00	
5 Valakulan Eri	342	10.92	10.00	
6 Sitheri	255	33.18	30.00	
7 Thirumeri Eri	218	291.37	265.00	
8 Minnal Eri	323-1	85.79	48.15	
9 Vadakku Eri	117	10.11	10.00	
10 Kaliamangalam Eri	483, 446	12.14	10.00	
11 Velambiran Eri	84	27.71	25.00	
12 Kattakudi Eri	132	30.70	10.00	
13 Konniyadi Eri	798	16.18	15.00	
14 Sengalodai Eri	45	8.09	5.00	
15 Idayankulam Eri	219	9.08	6.00	
16 Parayan Eri	528, 529	7.28	5.00	
17 Madavan Eri	75	16.18	15.00	
18 Thamarayal Eri	378	20.23	18.00	
	Total	758.24	621.84	

Fresh Area :

	Total area of the tank in hectares.	Area available for planting. in hectares.
(1)	(2)	(3)
1 Thanjavur Taluk	1,097.07	1,026.27
2 Thiruvaiyaru	124.61	52.76
3 Pattukottai	1,587.44	645.08
4 Peravoorani	1,797.99	689.84
5 Orathanadu	785.24	507.19
6 Mannargudi	758.24	621.84
Total	6,450.54	3,542.98

Section 3—Analysis of the crop

478. The areas under this working circle have been planted with Babul (Acacia nilotica) Eucalyptus hybrid Eucalyptus terticornis) Parambai (Acacia ferrugenea) Velvelan (Accacia leucophloea) and Odai (Acacia planifrons) wherever the soil is black and clayey, Babul thrives well. In other places Acacia ferruginea and Acacia leucopholea are coming up well.

Section 4—Method of Treatment.

479. The Silvicultural system followed in this working circle will be simple coppice system wherever the coppiceing is not adequate clear felling with artificial regeneration will be followed. A rotation of 10 years will be followed in the case of Acacia nilotica (babul) raised in tank beds. In the case of Eucalyptus planted either as a pure crop or along with Acacia arabica the same rotation of 10 years will be followed.

480. In the case of other areas which are not inundated species like acacia planifrons and Hardwickia binata can be planted.

481. *Choice of species.*—In tanks where the soil is clayey, babul (Acacia nilotica will be planted. In Saline soils both in tank beds and river and canal banks Prosopis julifora will be planted. In village porombokes where the soil is red loam E.H. will be planted. In case the soil is sandy loam, Acacia auriculaiformis and Subabul (Leucanna glance) can be planted.

482. *Rotation.*—E.H., Acacia nilotica, Acacia plan.frons and Acacia auriculieformis can all be harvested in 10 years.

Heance a rotation of 10 years is fixed for all these plantations.

483. *Espacement.*—The present espacement of 3 x 3m is just adequate. The size of the plantation will be decided by the District Forest Officer depending upon the annual target fixed funds available, are available, labour and other factors.

Section 5—Method of Executing felling.

484. The plantations which are nature for felling and have completed the age of 10 years will be felled through the agency of contractors. Felling by saw will be insisted. Sale will be conducted between October and December. The felling period will be from January to June.

485. Tabulation Statement of Felling.

Serial number and Name of plantation.	*Year of plantation.*	*Area in hectares.*	*Year of fellings.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)
(a) Thanjavur Range.				
1 Sukkudi Eri	1973	30.00	1983	..
2 Aramundan Eri	Do.	12.21	Do.	..
3 Egapuri Eri	Do.	24.00	Do.	..
4 Neduva Eri	Do.	20.00	Do.	..
5 Moolakkudi Eri	Do.	37.00	Do.	..
6 Achanpatti Eri	1981	24.20	Do.	—
7 Palayapatti Eri	Do.	21.60	1991	..
8 Munian Eri	Do.	20.70	Do.	..
9 Kadattupatti Eri	Do.	16.71	Do.	..
10 Aramundan Eri	Do.	14.15	Do.	..

Serial number and Name of the Taluk.	S.F. Number.	Total area of the tank in Hectares.	Area available in Hectares.	Remarks.
(1)	(2)	(3)	(4)	(5)
		Thanjavur Range—cont		
11 Kalar alias samban Eri	1981	9.20	1991	..
12 Andan Eri	Do.	13.73	Do.	..
13 Velambakudi Eri	Do.	11.16	Do.	..
14 Karamba Eri	Do.	20.31	Do.	..
15 Ela Eri	Do.	8.40	Do.	..
16 Ayyanavaram Eri, Dam	Do.	26.50	Do.	..
17 Sayakudi Eri	Do.	50.00	Do.	..
18 Alagapettai Eri	Do.	8.70	Do.	..
19 Marandakudi Peria Eri	1982	6.20	Do.	..
20 Maruthakudi Pudu Eri	Do.	19.50	1992	..
21 Chellappan Pettai Pethamaran Eri ..	Do.	18.00	Do.	..
22 Pagadaikudi Eri	Do.	12.4	Do.	..
23 Cherandi Eri	Do.	18.4	Do.	..
24 Pala Eri	Do.	16.00	Do.	..
25 Beemanpatti Eri	Do.	7.5	Do.	..
26 Karani Eri	Do.	40.16	Do.	..
27 Nabiya Eri	Do.	4.98	Do.	..
		511.71		
		(b) *Pattukkottai Range.*		
1 Pannavayal Eri	1973	50.00	1983	..
2 Kargavayal Eri	1974	75.00	1984	..
3 Kurichi Eri	Do.	75.00	Do.	..
4 Pannavayal Eri	1975	50.00	1985	..
5 Sendakkottai Eri	Do.	75.00	Do.	..
6 Sellikurichi Eri	1979	124.50	1989	..
7 Soorapallam Eri	1980	30.00	1990	..
8 Naduvikkottai tank	1982	15.20	1992	..
9 Alivalam Tank	Do.	29.20	Do.	..
10 Palathi Tank	Do.	15.60	Do.	..
11 Panikattuvayal tank	Do.	18.73	Do.	..
12 Seethambalpuram	Do.	8.00	Do.	..
13 Arayankulam tank	Do.	7.30	Do.	..

(*b*) *Pattukottai Range*—cont.

Serial Number and Name of Plantation. (1)	*Year of Planiation.* (2)	*Area in hectares.* (3)	*Year of fellings.* (4)	*Remarks.* (5)
14 Vattathikottai tank	1982	29.37	1992	..
15 Ottangadu tank	Do.	23.13	Do.	..
16 Punavasal tank	Do.	7.67	Do.	..
17 Pallathur tank	Do.	23.50	Do.	..
18 Nainakulam tank	Do.	5.00	Do.	..
19 Ettivayal	Do.	17.20	Do.	..
20 Periyakottai tank	Do.	39.30	Do.	..

(*c*) *Orathanadu Range.*

1 Arumulai Eri	1980	48.30	1990	..
2 Athambai Eri	Do.	87.00	Do.	..
3 Athambai Sitheri	1981	35.00	1991	..
4 Karimuthu Eri	1982	5.40	1992	
5 Ponneri	Do.	28.00	Do.	..
6 Kulamangalam Eri	Do.	..	Do.	
7 Vellayan Eri	Do.	16.00	Do.	
8 Siruthalai Eri	Do.	13.8	Do.	..
9 Nayil Eri	Do.	13.00	Do.	..
10 Valluvakudi Eri	Do.	10.00	Do.	..
11 Thoppu Viduthi	Do.	13.60	Do.	..
12 Unji Viduthi Eri	Do.	12.00	Do.	..
13 Kodaikarambai Eri	Do.	18.30	Do.	..
14 Pani Kondhan Eri	Do.	33.30	Do.	..
15 Solankulam Eri	Do.	6.40	Do.	..
16 Balaramankulam Eri	Do.	5.00	Do.	..
17 Navalikulam Eri	Do.	42.8	Do.	..
18 Madapallikulam	Do.	44.48	Do.	..
19 Kadapalli Eri	Do.	18.00	Do.	..

(d) *Peravurani Range.*

Serial Number and Name of Plantation. (1)	*Year of Plantation.* (2)	*Area in hectares.* (3)	*Year of fellings.* (4)	*Remarks.* (5)
1 Avanam	1980	60.00	1990	..
2 Ayyankulam	Do.	25.00	Do.	..
3 Kandikulam	1981	35.00	1991	..
4 Umathandu tank	1982	90.00	1992	..
5 Korathoor tank	Do.	36.80	Do.	..
6 Rettavayal tank	Do.	38.50	Do.	..
7 Solaikkadu Tank	Do.	35.00	Do.	..
8 Kalyanaramanathapuram tank	Do.	106.00	Do.	..
		426.80		

(e) *Mannagudi Range.*

1 Thulasandrapuram	1975	40.00	1985	--

ABSTRACT.

	HECTARE.
1 Thanjavur Range	511.71
2 Pattukottai Range	718.70
3 Orathanadu Range	450.38
4 Peravurani Range	426.80
5 Mannargudi Range	40.00
Total	2,147.59

Section 6—Regulation of Regeneration Operations.

486. *Nursery.*—Since there is damage by submersion it is advisable to plant one year old seedlings with sufficient height in the case of Babul. Hence nursery should be started well in advance, one year ahead of planting, viz. October, November of the previous year. Polythene bags of size 13 x 25 cms. and 200 guage will be filled with good soil and manure fixed well at the ratio of 4 : 1.Seeds will be dibbled at the rate of one seed per bag and watered profusely with rose cans. In the case of Babul and Acacia auriculifurnis the seeds will be pretreated by putting them in boiling water and allowing them to cool down over night so as to soften, the hard besta and enabling the seed to germinate easily and quickly. The shining cover of the seeds should be washed by squeezing them with profuse water.

487. The nurseries will be located as far as possible near the planting side and the seedlings are well nursed in the nursery until they are planted out in the site. The seedlings will be shifted as and where necessary so as to prevent root striking the ground. As this operation is carried out the seedlings will be graded height war so that it will be easy for transporting the vigorous healthy seeldings without rejecting at the last and also the backward plants can be given adequate care and their growth boosted so as to get uniform sized seedlings.

488. *Preparation of Planting Site.*—The area will be surveyed well in advance and aligning at an espacement of 3 × 3 m and pits of size 30Cm³ will be dug. The dugout soil and the pits will be allowed to weather. This work should be completed not later than August.

489. *Planting.*—After getting a good saturating rainfall the seedlings will be transported to the planting site either by head loads or by carts without root shock and distributed at one seedling per pit. The polythene containers will be removed carefully without breaking the ball of earth. The seedling with the ball of earth in tact will be placed at the centre of the pit and the top soil will be filled in the pit. The soil around the seedling will be compressed.

In case of E.H. 5 grams of B.H.C. 10 per cent powder will be dusted inside the pit before planting.

490. *Casualty Replacement.*—The casualties will be replaced as and when noticed in the plantation ensure cent per cent stocking.

491. *Soil Working.*—One weeding and soil working to a radius of 1m around the plant after the plants have established should be done by picking the soil to a depth of 10 to 15 cm. This should be done during October, November.

One soil working to a radius of 0.50 cm. will be done during the second year during July, August before the onset of mansoon immediately after the premansoon showers are obtained.

492. *Protection.*—The area will be closed to grazing for five years including the year of formation. Plot mazdoors will be employed to protect the plantation from damages by human and other biotic factors. Name boards will be displayed at vantage points and wise publicity and propaganda will be made to teach the people and create public awareness of the plantations and its direct and indirect benefits.

493. *Control Records.*—Plantation journals will be maintained in the prescribed form by the Range Officer with all details such as location sketch surveyed sketch, history of the plantation cost of rising and other details, etc., should be posted. The survival percentage and other periodical observations should be recorded in the journal then and there by visiting officers.

The control forms prescribed for this working circle are given in Appendix No. XIX-B and will be posted every year by the District Forest Officer.

CHAPTER IV.

CASUARINA WORKING CIRCLE.

Section 1—General Constitution Objection of Management, etc.

494. This working circle comprises of all the existing casuarina plantations and new areas proposed for planting during the period of this plan in order to supply firewood to prevent soil erosion and to create shelter belts and wind breaks in the coastal areas.

Casuarina plantations have been raised over an area of 496.71 Ha. in Thanjavur division from 1974 to 1982 ; under shelter belt scheme.

495. *Character of Vegetation.*—The areas included in this working circle fall under the 4A;L1 Littoral forest type of Champion and Seth and are detailed in Chapter-II of Part I. Casuarina plantations are mostly confined to sandy places near the coast and Padugai's of the Cauvery. The soil is sandy, porous coarse and dry at the surface and also poor in mineral nutrients and nitrogen. Strong salt laden winds and inundation of the area by brackish water act as dessicating agents for xerophytic condition of vegetation. There is variation in growth between plantations and also within the same plantations.

List of Casuarina plantation in Thanjavur Division.

Serial number and Name of Range.	*Locality.*	*Year of plantation.*	*Coupe number.*	*Extent in hactares.*	*Spacing and percentage of survivals.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1 Kumbakonam ..	Maharajapuram ..	1974	..	17.00	2.5X2.5 2 per cent.	..
	Do. ..	1976	Bit II	4.00	2.5X2.5 11 per cent.	..
	Do. ..	Do.	Bit I	12.00	2.5X2.5 16 per cent.	..
	Do. ..	1977	Bit I and II.	5.50	2.5X2.5 Failure.	..
	Du. ..	Do.	Bit III	3.00	2.5X2.5 Failure.	..
	Do. ..	1978	Bit I	9.00	2.5X2.5 Failure.	..
	Do. ..	Do.	Bit II	8.00	2.5X2.5 Failure.	..
	Do. ..	1979	Bit I	13.00	2.5X2.5 Failure.	..
	Do. ..	1980	Bit II	23.00	2.5X2.5 4 per cent.	..
	Do. ..	Do.	Bit I	6.90	2X2 20 per cent.	..
	Do. ..	Do.	Bit II	13.50	2X2 15 per cent.	..
2 Thanjavur	Vadugagudi	Do.	Bit I	10.00	Do. 5,000 Seedlings: exists or 2 ha.	..
	Do. ..	1982	Bit II	11.50		
3 Sirkali	Sodiakudi	1974	..	44.00	2.5X2.5 15 per cent.	..
	Alakudi	Do.	..	6.13	2.5X2.5 15 per cent.	..
	Gopalasamudram ..	Do.	..	4.00	2.5X2.5 15 per cent.	..
	Mudalaimadu CRA.	1975	..	16.56	2.5X2.5 40 per cent.	..
	Pudupattinam ..	Do.	Bit I	6.26	2.5X2.5 45 per cent	..
	Do. ..	Do.	Bit II	17.76	2.5X2.5 34 per cent.	..
	Gopalasamudram CRA.	1976	..	18.00	2.5X2.5 35 per cent	

Serial number and Name of Range.	*Locality.*	*Year of plantations.*	*Coupe number.*	*Extent in hectares.*	*Spacing and percentage of survivals.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)	(6)	(7)
3. Sirkali—*cont.*	Pudupattinam ..	1976	Bit III	5.00	2.5X2.5 55 per cent.	..
	Do. ..	Do.	Bit II	7.00	2.5X2.5 60 per cent.	..
	Do. ..	Do.	Bit I	9.10	2.5X2.5 50 per cent.	..
	Alakudi CRA . ..	1977	..	8.80	2.5X2.5 failure.	..
	Pudupattinam ..	Do.	Bit I	8.36	2.5X2.5 45 per cent	..
	Do. ..	Do.	Bit II	8.00	2.5X2.5 40 per cent	..
	Do.	Do.	Bit III	20.00	2.5X2.5 45 per cent	..
	Mudalaimadu ..	1978	..	6.64	2.5X2.5 70 per cent.	..
	Pudupattinam CRA.	Do.	..	14.67	2.5X2.5 40 per cent.	..
	Do. ..	Do.	Bit I	6.00	2.5X2.5 failure.	..
	Do. ..	Do.	Bit II	5.00	2.5X2.5 failure.	..
	Do. ..	Do.	Bit II	3.00	2.5X2.5 50 per cent	Seashore Casuarina plantation.
	Koozhalayar	Do.	Coupe	16.00	2.5X2.5 55 per cent.	Seashore casurina plantation.
	Kodiampalayam ..	Do.	..	20.00	2.5X2.5 45 per cent.	Do.
	Velangani	Do.	Bit I	52.00	2.5X2.5 25 per cent.	165 ha restock during 1979.
	Do.	1979	Bit II	29.00	2.5X2.5 25 per cent.	Seashore casuarina plantation.
	Pudupattinam CRA.	Do.	..	18.00	2.5X2.5 60 per cent.	
	Do. ..	Do.	..	14.00	2.5X2.5 60 per cent.	Seashore.
	Do. ..	Do.	..	28.00	2.5X2.5 50 per cent.	..
	Nagore	1980	..	25.00	2.5X2.5 50 per cent.	Seashore casuarina plantation.
	Thurumullaivasal ..	Do.	..	25.00	2X2 25 per cent.	Do.
	Koozthayar	Do.	Coupe I	3.00	2X2 30 per cent.	Do.
	Mudalaimadu ..	Do.	..	14.00	2X2 40 per cent.	..
	Pudupattinam ..	Do.	..	23.00	2X2 50 per cent.	Seashore casuarina plantation.
	Keelamoovarkarai ..	1981	..	15.00	2X2 ..	failure.
	Nagore	1982	..	40.00	2X2 70 per cent.	Seashore.
	Pudupattinam	Do.	..	1.6	2X2 70 per cent.	..
	Do. ..	Do.	..	10.00	2X2 75 per cent.	.. Deducting failure area 496.71 hectares.

Section 2—Division of the Area.

497. The total area of the Casuarina Working Circle is 814.04 hectares as follows :—

Serial number.	*Existing plantation in hectares.*	*Proposed plantations in hectares.*	*Total area.*
(1)	(2)	(3)	(4)
Kumbnkonam	61.40	53.50	114.90
Thanjavur	2.00	19.50	21.50
Sirkali	496.71	40.93 10.00 in Gopalasamudram R.F. 80.00 in seashore area.	.. 627.64
Mannargudi	Nil.	50.00 in seashore area.	50.00
Total ..	560.11	Nil.	

498. *Division into felling series.*—A highly irregular planting programme couped with the scattered nature of the planting sites, and also the areas of the past has led to unscientific working i.e., renders it very difficult to divide the area into felling series, each with complete age gradations and equi-productive annual coupes.

499. *Two felling series are formed.*—The distribution area and location of felling series are given below :

Range.	*Name of the series.*	*Name of the blocks.*	*Area in hectares.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)
Kumbakonam ..	Coleroon series ..	(1) Maharajapuram.	114.90	..
Thanjavur	Do. ..	(2) Vadugagudi ..	21.50	..
Sirkali	Do. ..	(1) Sodicakudi ..	44.00	..
		(2) Alakkudi	14.93	..
		(3) Pudupattinam ..	196.75	..
		(4) Mudalaimadu ..	36.96	..
		(5) Gopalasamudram.	27.00	..
		(6) Kodiampalayam.	20.00	..
Sirkali ..	Coastal series ..	(1) Thandavakulam.	3.00	..
		(2) Koozhayar ..	29.00	..
		(3) Vellangani ..	81.00	..
		(4) Nagoor	105.00	..
		(5) Thirumullaivasal.	25.00	..
		(6) Keelamoovarkarai.	25.00	..
		(7) Palayar	10.00	..
		(8) Madavanadu ..	10.00	..
Mannargudi	Do. ..	(1) Vedaranyam .. Nalukalmandapam.	50.00	..
		Grand Total ..	814.04	

Section 3—Analysis of the Crop.

500. The stocking of Casuarina plantation vary from place to place. The planted areas also vary in each year. The damage by way of floods resulting in the washing away of Casuarina seedlings along the river margins are found in the Padugais of Cauvery and coleroon. The fertility of plantation sites differ from one another and due to soil factor there is great variation within the same plantation.

Section 4.—Method of Treatment.

501. The method of treatment proposed is clear felli followed by artificial regeneration. Choice of specices : Casuarina equisetifolia will be the species mainly raised as pure crop.

502. *Rotation.*—The rotation is fixed at 6 years.

503. *Espacement.*—The espacement to be adopted will be 1 M X1 M.

504. *Size of annual plantation.*—The scattered nature of blocks in each series an irregular planting programme in the past do not permit allotment of equal extents of compact blocks for annual planting. The following table prescribes the annual planting areas in each series.

505. Statement of Casuarina plantations to be raised in Thanjavur Forest Division from 1984 to 1993.

Serial number and name of the series.	*Locality.*	*Year of formation.*	*Coupe number.*	*Area in hectars.*	***Remarks.***
(1)	(2)	(3)	(4)	(5)	(6)
1 Kumbakonam	Coleroon Maharajapuram	1984	I and II	36.00	..
2 Do.	Do.	Do.	III	17.00	**64**
3 Thanjavur	Coleroon Vadugagudi	Do.	I	10.00	..
4 Sirkali	Coleroon Maharajapuram ..	1985	IV	12.00	..
5 Do.	Coleroon Sodiakudi	Do.	I	44.00	..
6 Do.	Coleroon Alakudi	Do.	I	6.13	..
7 Do.	Coleroon Pudupattinam	Do.	VI	6.26	..
8 Do.	Do.	Do.	VII	17.76	..
9 Do.	Do.	Do.	VIII	21.10	..
10 Do.	Coleroon Gopalasamudram ..	Do.	I	4.00	..
11 Do.	Coleroon Kodiampalayam	Do.	I	20.00	..
12 Mannargudi	Coastal Nalukalmandapam ..	Do.	I	10.00	..
13 Sirkali	Coastal Thandavankulam	Do.	I	3.00	..
14 Do.	Coastal Kozhayar	Do.	I	16.00	..
15 Do.	Coastal Vellangani	Do.	I	52.00	..
16 Kumbakonam ..	Coleroon Maharajapuram	1986	VI	4.00	..
17 Sirkali	Alakudi	Do.	II	8.00	..
18 Do	Coleroon Pudupattinam	Do.	IX	36.36	..
19 Do.	Coleroon Mudalaimadu	Do.	I	6.40	..
20 Do.	Coleroon Gopalasamudram ..	Do.	II	13.00	—
21 Do.	Coastal Vellangani	Do.	II	29.00	..
22 Mannargudi	Coastal Nalukalmandapam ..	Do.	II	10.00	..
23 Kumbakonam	Coleroon Maharajapuram	1987	..	13.50	..
24 Do.	Do.	Do.	II	5.50	..
25 Do.	Do.	Do.	I to V	6.90	..
26 Sirkali	Coleroon Pudupattinam	Do.	I to V	23.00	..

Serial number and name of the series. (1)	Locality. (2)	Year of formation. (3)	Coupe number. (4)	Area in hectares. (5)	Remarks. (6)
27 Sirkali	Coleroon Mudalaimadu	1987	II	14.00	..
28 Do.	Coleroon Gopalasamudram ..	Do.	III	10.00	..
29 Do.	Coastal Koozhayar	Do.	II	3.00	..
30 Do.	Coastal Nagoor	Do.	I	25.00	..
31 Do.	Coastal Keelamovaikarai	1988	I	15.00	..
32 Mannargudi	Coastal Nalukalmandapam ..	1983	IV	10.00	..
33 Sirkali	Coastal Keelamavarkarai ..	1989	II	10.00	..
34 Do.	Coastal Nalukalmandapam ..	1988	IV	11.06	..
35 Do.	Coastal Pudupattinam ..	1989	II	10.00	..
36 Mannargudi	Coastal Nalukalmandapam ..	Do.	V	10.00	..
37 Thanjavur	Coastal Vadugagudi	Do.	II	11.50	..
38 Sirkali	Coastal Nagoor	Do.	I	40.00	..
39 Do.	Coastal Palayar	1990	I	10.00	..
40 Kumbakonam	Coleroon Maharajapuram	1991	III	17.00	..
41 Do.	Do.	Do.	I and II	36.00	..
42 Thanjavur	Vadugagudi	Do.	I	10.00	..
43 Kumbakonam	Coleroon Maharajapuram	1992	IV	12.00	..
44 Sirkali	Coleroon Sodiakudi ..	Do.	I	44.00	..
45 Do.	Coleroon Alakkudi ..	Do.	I	6.13	..
46 Do.	Coleroon Pudupattinam	Do.	VI	6.26	..
47 Do.	Do.	Do.	VII	17.76	..
48 Do.	Coleroon Mudalaimadu	Do.	III	21.10	..
49 Sirkali	Coleroon Gopalasamudram ..	Do.	I	16.56	..
50 Do.	Coleroon Kodiampalayam	Do.	I	4.00	..
51 Mannargudi ..	Coastal Nalukalamandapam ..	Do.	I	3.00	..
52 Sirkali	Coastal Thandavankulam	Do.	I	10.00	..
53 Do.	Coastal Koozhayar	Do.	I	3.00	..
54 Do.	Coastal Vellangani	Do.	I	3.00	..
55 Kumbakonam	Coleroon Maharajapuram	1993	V	4.00	..
56 Sirkali	Coleroon Alakkudi	Do.	II	8.80	..
57 Do.	Coleroon Pudupattinam	Do.	IX	36.36	..
58 Do.	Coleroon Mudalampadu	Do.	XI	6.40	..
59 Do.	Coastal Velangani	Do.	II	15.00	..
60 Do.	Do.	Do.	II	29.00	..
61 Mannargudi	Coastal Nalukalmandapam ..	Co.	II	10.00	..
62 Kumbakonam	Coleroon Maharajapuram	1994	..	13.50	..
63 Do.	Do.	Do.	..	5.50	..
64 Do.	Do.	Do.	..	0.90	..
65 Sirkali	Coleroon Pudupattinam	Do.	I to V	23.00	..
66 Do.	Coleroon Mudalaimadu	Do.	II	14.00	..
67 Do.	Coleroon Gopalasamudram ..	Do.	III	10.00	..

Serial number and Name of the series.	Locality.	Yaar of formation	Coupe number.	Area in hectaes.	Remark
(1)	(2)	(3)	(4)	(5)	(6)
68 Sirkali	Coastal Koozhayar	1994	III	3.00	..
69 Do.	Coastal Koozhayar	1994	I	25.00	..
70 Do.	Coastal Thirumullaivasal	1994	I	25.00	..
71 Mannargudi	Coastal Nalukalmandapam ..	1994	III	10.00	..
72 Kumbakonam	Coleroon Maharajapuram	1995	I	3.00	.
73 Sirkali	Coastal Keelmovakarai	1995	I	15.00	.
74 Mannargudi	Coastal Nalukalmandapam ..	1995	IV	10.0	..

Section 5—Method of Executing Felling.

506. Plantation at the rotation age will be sold for extraction by contractors. The lease period will be 6 months from December to May.

507. *Survey and demarcation* :—The proposed areas for clear will be felling surveyed and demarcated on the ground in the month of September of the year period to that of felling. The area will be devided into convenient bits to encourage more bidders to bid. The coupe felling will be sold for extraction in public auction during the month of November. The bid shall be for the whole area of the plantation including the casuarina and other growth in the coupes.

508A. *Regulation of Fellings*—As a protection against dirfting of sand gales and salt borne winds a shelter belt consisting of five outer most rows of trees along a coupe peripheryshall be left unfelled. The trees shall be ringed with white paint serially numbered both at breast, heigh and base and enumerated. The list of such trees shall be checked both by Range Officer and District Forest Officer at the time of checking the survey of the coupe. The list shall form a part of the agreement.

508-B. Coupes will be divided into strips and felling will be permitted in one strip at a time. Next strip work will be permitted only after the completion of the previous strip in a fully satisfactory manner with certificate of the Range Officer in this regard after careful inspection and also any amount due to the department must be paid before permission is granted to enter the next strip. Stumps of Casuarina shall be uprooted and removed and the pits formed by their uprooted filled up and levelled by the contractors to replant the area again. The felled materials will be stacked in lots of 3m X 1, by 0.6m. or its multiples for measuring the volume of the wood. Charcoal burning within the coupe or block is prohibited and the mazdoors employed by the contractor shall be supplied with cutter's chit to fell and collect the produce in the leased area.

509. *The follwing Statement shows the plantation in each series*

Statement of felling of Casuarina plantations

from 1983—1995.

Name of series

Coleroon series.

Year of formation	*Maharaja-puram.*	*Vadugagudi*	*Sodlakudy*	*Alakudy*	*Pudu-pattinam.*	*Mudalai-madu.*	*Gopala-samudram.*	*Kodiam-palayam.*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1974 ..	17.00 III	..	44.00 I	6.13 I	..	..	4.00 I	..
1975 ..	..	..	..	..	6.26 VI 17.76 VII	16 56 III	..	..
1976 ..	4.00 V 12.00 IV	..	..	..	5.00 7.00 9.10	13.00 II	..	..
1977 ..	3.00 I 5.50 II	..	..	8.00 II	8.36 8.00 (10.00	..	..	..
1978 ..	..	..	..	..	..	6.40 I	..	20.00
1979 ..	..	..	..	..	13.00 14.00 28.00	..	..	..
1980 ..	13.50 6.90	..	.	..	23.00 I and V	14.00 II	..	..
1981 ..	..	..	..	..	..	..	..	..
1982 ..	..	[illegible]	11.50 II	..	1.60 10.00	..	..	..
1983— ..	36.00 I and II	..	10.00 I	..	..	..	..	..
1984	17.00 III				[illegible]			
1985 ..	10.00 I	..	44.00 I	6.31 I	6.26 VI 17.76 VII	..	16.56 III	.
1986 ..	40.00 V	..	..	8.80 II	36.36 IX	..	6.40 I	[illegible]
1987 ..	13.50 5.90 II 6.90	..	..	..	..	..	..	..
1988 ..	3.00 I	..	..	..	23.00 I and II	..	14.00 II	[illegible]
1989 ..	11.50	..	..	..	11.00 II 1.60	..	..	..

Statement of felling.

to be clear felled during the working plan period.

in Thanjavur Forest Division.

—Coupe.									
Number area in hectare.									
Coastal series.									
Thandavankulam.	*Koozhayar*	*Vellangani*	*Nagore.*	*Thirumullaivasal.*	*Keelnovalkarai.*	*Palayar.*	*Madavamedu.*	*Naukamandapam.*	*Year of felling*
(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
..	..	..	..	..	..	..	..	..	1983
..	..	..	..	..	..	..	..	..	1983
..	..	..	..	..	..	..	..	..	1983
..	..	..	..	..	..	..	..	..	1983
3.00 I	16.00 I	52.00 I	..	..	..	..	..	..	1984
..	..	29.00 II	..	..	..	..	..	..	1985
	3.00 II	..	25.00 I	25.00 I	..	..	..	..	1986
..	..	..	..	..	..	..	..	..	..
..	..	..	..	40.00 II	..	..	..	..	1988
20.00 I	3.00 I	16.00 I	52.00 I	..	..	..	..	10.00 I	1990
..	..	..	29.00 I	..	..	..	..	10.00 II	1990
..	..	..	..	..	..	..	..	..	..
..	..	3.00 II	25.00 I	25.00	..	..	..	10.00 III	1992
..	..					15.00 I		10.00 IV	1994
..	..					10.00 II	.	10.00 V	1995

Section 7—Regulatio n of Preparatory Works and Planting.

510. Each coupe felled will be eplanted in the next year and all the preliminary works will be done well ahead of the planting .

511. *Seed Collection.* —Casuarina flowers and seeds twice a year in May, June and December, January. The seeds retain their viability for only a few month. Seeds for raising nursery should be collected from cones ripening in June, for immediate use. The cones are collected when they are ripe, ripeners being distinguished by their brownish colour, but before they dehisce from well grown nature trees of not less than 5 years in age. They should be collected in the afternoon and spread out for drying on a clean floor or mats, on the following morning and allowed to dry in the sun f or 3 or 4 days, care being taken to see that they are not exposed to night or early morning dew, when they dehisce and liberate winged acheries. The acheries are minute and 700 to 750 of them weight a gram. The seeds which are liberated on the first two days alone are considered as fertile. These seeds should be dried for a further period of two or three days in the sun. As they are easily carried away by the wind and ants, considerable care is necessary in protecting the seeds. They shpuld be stored in air-tight containers mixed with ash or insecticide. One bag full of ripe cones will give about 450 Grams, of dried clean seeds. Germination percentage five.

512. *Preparatory of Nursery.*—A permanent central nursary for Casuarina with good watering facilities is sufficient to meet the division's requirment, since the nacked casuarina seedlings can be transported to a long distance without damage.

Standard beds of 10m. long and 1m wide will be prepared. The soil should be dug upto a depth of 50cm and beds formed level with the ground after adding 250Kg., of Farm yard manure per bed. 60cm wide path ways will be laid between beds.

513. *Sowing.*—Sowing of seeds mixed with sand and ash in the germination beds will be done in the first week of December with 80 gm., of seed per bed, sprinled over with an insecticide like Acrosone and covered with a thin layer of sand. After sowing the bed will be covered with Casuarina twigs, and needless or with paddy straw and profusely watered both morning and evening with rose cans. Germination will be noticed in about ten days and completed in about two weeks. When complete the cover will be removed and watering continued twice daily until the seedlings are removed for planting.

514. *Pricking out.*—The seedlings will be pricked out at spacing of 50cm., square into tbe transport beds of 10m x 1m wide, when they are about 10 to 15 Cm in height. The seedling tale about 5 to 6 month to reach the optimum size of 50 to 60 cm. and by July the seedlings will ready for planting. Only seedlings with leading shoot intact should be planted. If any posts are noticed in the nursery, insecticides like folidal or dialdrin should be sprayed as and when necessary. Before removing the seedlings the beds should be watered profusely.

The seedlings should be removed carefully by dismantling the bed without damaging the roots and also they should be never pulled out violently.

515. *Preparatory works.*—The area will be given a burning and ploughing as soon as the contractors vacate the area. As Casuarina is succeptiable to browsing and mechanical damage by cattle, a go od and st rong fence should be erected in fore planting.

516. *Aligning and stacking.*—Aligning and staking will be done at an espacement of 1m x 1m and that should be completed by the end of June.

517. *Digging pits.*—Pits of size 30 Cm³ (30 Cm x 30 Cm x 30 Cm) will be dug and this work should be completed at the end of June.

518. *Planting.*—Planting will be done in the month of July as soon as the first showers are received. Since watering is being provided and late planting results in poor stocking and growth planting must be done in the month of July, even if the rains are not adequate. Planting stock consists of naked nursery seedlings. Two seedlings will be planted each pit. Care should be taken to ensure that the fine particulars of soil adhering to the roots are not shaken off as they contains the valuable nitrogen fixing mycorrisa.

Planting should be taken up by the first week of July and completed before the end of August. At the time of planting the soil in the pit should be puddled by puring one pot of water. Seedlings will be planted without bending the top roof. One seedling only will be retained per pit the less vigorous one should be removed.

519. *Watering.*—The object of watering in the Sandy soil is to ensure estbalishment of the seedling to accelerate their initial growth, so that their tap roof reaches the zone of source of moisture early. This is the most expensive item of work. Seasonal factors, soil and condition of the plantation are the more important factors that determine the periodicity or watering and this can be assessed best by the officer on the spot, who can use his discretion judiciously for watering during the first two year s with the object of getting a fully stocked plantation at minimum cost.

520. The following water regime is prescribed :—

(1) Half a pot of water per plant per day for the first 30 days after planting during non-rainy days.

(2) 1/3 pot of water per plant on alternate days upto the end of December excepting rainy days.

(3) One pot of water per plant. Once in five days from January to June subject to the maximum of 150 watering days'.

Watering is best done early in the morning and late afternoons. Hot hours during the day should be avoided. Pots used for watering will be procured departmentally to ensure proper capacity (10 litres).

If due to any unusual climatic conditions there is need to increase the watering in any particulars area the District Forest Officer may increase the watering regime with the prior approval of the Conservator of Forests.

521. *Well.*—One well is to be dug for every 0.5 ha, of plantation. The size of the well is 6 to 7 m. diameter at the top and 3 to 3.5 m at the bottom with a depth of 3 to 3.5 m. It is suggested that old wells wherever present should be renovated and maintained. Hand operated filter point pump is advantageous in highly sandy areas.

522. *Replacement of casualities.*—Replacement of causalities will be done till the end of mansoon as and when they occur in the first year. No replacement of casualties will be done during the second year unless large patches of failure occur due to unforeseen circumstances.

523. *Weeding and soil works.*—Weeding and soil working will be done once in five year in October to a diameter of 1.5 m. around the plant. Saucering will be done periodically to hold water.

524. *Second year maintenance.*—If the stocking is less than 80 per cent replacement will be done in June, July of Second year. One pot of water once 5 days from April to end of June upto a maximum of 90 days can be done for backward plants soil working to a radius of weeding should be given.

If it is necessary to continue watering during the thrird year the matter will be decided after consultation with the conservator of Forests.

525. *Pruning.*—Free circulation of air among saplings and poles of Casuarina plantation is essential for proper development. So pruning will be done in the fourth year. **At the same time all dead and dying trees will be extracted.**

A statement showing the plantations to be pruned is furnished below :—

STATEMENT SHOWING THE CASUARINA PLANTATIONS TO BE PRUNED IN *Coleroon Series*.

	Year of formation.	*Maharaja-puram.*	*Vaduga-gudy.*	*Sodiakudi.*	*Alakudi.*	*Pudu-pattinam.*	*Mudalai-madu.*	*Gopala-samudram.*	*Koyam-palayam.*
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
979	..	..	..	..	..	13.00 14.00 28.00	..	..	..
1980	..	6.90 13.50	..	..	..	23.00	..	..	..
1981	..	..	..	..	..	..	..	..	..
1982	..	..	11.50	..	..	10.00 1.60	..	..	..
1983	..	36.00 17.00	10.00	..	..	..	..	..	..
1984	..	12.00	..	44.00	6.13	6.26 17.76 21.10	16.56	4.00	20.00
1985	..	4.00	..	..	8.80	36.36	6.40	13.00	..
1986	..	13.50 5.50 6.90	..	..	..	23.50	14.00	10.00	..
1987	..	3.00	..	..	..	..	..	..	..
1988	..	..	11.50	..	..	10.00 1.60	..	..	..
1989	..	..	..	..	..	..	..	..	..
1990 1991	..	17.00 36.00	10.00	..	..	..	..	..	..

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				Coastal series.					
Thandavan-kulam.	*Koolayar.*	*Velangani.*	*Nagore.*	*Thirumullai-vasal.*	*Keela-moovar-karai.*	*Palayar.*	*Madava-madu.*	*Vedaranyam.*	*Year of prunin.*
(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
..	..	29.00	..	..	..	..	..	..	1983
..	3.00	..	25.00	..	..	..	..	..	1984
..	..	..	..	..	..	..	..	..	..
..	..	..	15.00	..	..	..	..	..	1986
..	..	..	..	..	..	..	..	..	1988
3.00	16.00	53.0	..	..	..	..	..	10.00	1989
..	..	9.00	..	..	..	..	..	10.00	1990
..	3.00	..	25.00	25.00	..	..	..	10.00	1990
..	..	..	..	25.00	..	..	..	10.00	1990
..	..	..	15.00	..	10.00	..	..	10.00	1993
..	..	..	..	..	..	..	10.00	..	1994
..	..	..	..	..	..	..	..	..	..

526. The right to cut and remove pruned materials will be sold in Public auction during July with .lease period of three months from the date of execution of agreement. If there is no demand the pruning may be done departmentally and the cut materials collected and sold in public auction. The entire operation whether carried out by the lessee or by department will be done under the direct supervision of the Forester concerned. The general rules for carrying out pruning are :

(1) No pruning will be done for plants of heights 2 m and below :

(2) All the plants above 2 m in height will be prunied to half the height of the plants (or) to a maximum of 2.5 m from the ground level whichever is lower.

(3) A sharp knife should be used for pruning and care should be taken not to injure bark.

(4) The branches pruned will be cut about 5 cm away from the stem.

(5) The contractor should not block any creek big or small passing through the coupe (or) boundary of it.

(6) Dead stems if found will also be cut.

527. *Removal of Dead and Wind Fallen Trees.*—All the dead and wind fallen trees will be numbered serially once a year and sold in public auction after inspection by the District forest Officer.

528. *Thining.*—No thinning will be carried out as the rotation is only six years.

529. *Treatment of crop after first rotation.*—The area will be sown with Kolinji (Tephrosia purpurea) before planting casuarina in order to maintin soil fertility after final felling at the end of each rotation. Before sowing Kolinji, the area will be ploughed.

530. *Other regulations.—Grazing.*—The casuarina plantations will be closed to grazing for a period of five years including the year of formation. Notice boards in Tamil including closure should be put up at salient points of plantation; and the closure of the area notified in the District Gazette as detailed in the prescription of grazing working circle.

531. *Plantation boards.*—Each plantation should be provided with suitable plantation boards at four salient corners showing the year of formation, area and name of the block.

532. *Demarcation.*—The demarcation of the Casuarina area should be done by raising palmyrah on the boundary of each coupe at an interval of 2m. A clear space of 4m width will be left in between two coupes to serve as demarcation line and inspection paths.

533. *Protection.*—As the Casuarina plantations are situated very near to the villages, where there is great demand for fuel, illicit fellings are quite common and it is a big problem. So it is essential to put down the illicit removal and theft with available staff by supervising with greater vigilance. The appointment of plot watcher paid on monthly wages charged to the cost of the plantation upto 40ha. will be responsible for the protection of the plot.

534. *Pests and diseases.*—Pests and diseases do not occur in a large scale in this division. The ant, white ant and criket are the few insects which damage the seeds and seedlings in the nursery. The stems in the free stage are also damaged by borers. The uprootal and removal. of the disease attacked trees is the best way to eradicate the pest. Damage by the black fungus. Trichosporium vesiculosum is some times noticed in the plantations. The affected trees must be extracted immediately on noticing the attack.

535. *Statistics.*—The yield obtained from each plantation will be entered by the Range Officer in the plantation journal. Showing the quantity of billets and poles obtained separately Such records of yield and cost of plantations should be maintained accurately to assess profit and loss.

536. *Control.*—The following control records will be maintained for the working circle, as prescribed in appendix Nos. XVII, XIX (C) (G) (H), etc. :—

(1) Control book.

(2) Control journal.

(3) Control map.

(4) Record of works.

(5) Plantation and nursery journal.

(6) Deviation statements.

They should be posted upto date at the end of each financial year.

CHAPTER V.

BAMBOO WORKING CIRCLE.

Section 1—General Constitution of the Working Circle.

537. The bamboo working circle consists of all the existing bamboo plantations and the areas proposed for planting bamboos including the teak plantation where large gaps occur.

Section 2—Analysis of The Crop.

538. *Bambusa arundinacea.*—Peruvarai moongil is generally planted in both private plantations and in the plantations raised by the Forest Department. *Deudrocalaumns atrictus.* (Kalmoongil) can also be planted. The exisiting bamboos service after all the attempts of destruction. Bamboo planted on the banks of Palavar, Mettiar, Nattar, Manjalar, Mahimalayar, etc., are failure due to biotic factors.

Section 3—Division of The Area.

539. The tc tal area of the Bamboo working is furnished in the tabular statement furnished below:—

	Hectares.	*Kilometre.*
(1) Area of existing plantations	258	47.50
(2) Area prescribed for future	..	47.50
(3) Gap planting with bamboo	..	119.0
Total	258	166.50

Bamboo Plantations.

540. Existing Plantations—

Serial Number.	*Name of the Range.*	*Year of Plantation.*	*Name of Plantation. (Locality)*	*Area in hectare.*	*Amount spent including maintenance.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	Thanjavur	1974	Pillai vaikkal Puthar channel.	500 plants	Failure C.No. 1450/8 78 Raised only.	
2	Do.	Do.	Regunatha Cauvery.	500 plants.	500 Babul in 1974 Teak plantations. 2. Raised on 500 Bamboos 1974 Teak avenue plantation in Regunatha cauvery.	
3	Do.	1981	Vendayampatti Eri.	20	Rayed in of the tank.	
4	Do.	Do.	Sorakkudipatti Eri.	10.0	Do.	

(1)	(2)	(3)	(4)	(5)	(6)	(7)
5	Thanjavur	1981	Neppi Eri		6.0	Raised in of the tank.
6	Do.	Do.	Santhan Eri		10.0	Do.
7	Pattukkottai	Do.	Avanam		5.00	Failure.
8	Kumbakonam	Do.	Thirumalai-rajan.		40.00	Failure.
9	Do.	1974	Palavar	100 plants		Failure.
10	Do.	Do.	Idayar Bit I	150 plants		Do.
11	Do.	Do.	Idayar Bit II	150 plants		Do.
12	Do.	Do.	Mottiar	50 plants		Do.
13	Do.	Do.	Nattar	50 plants		Do.
14	Do.	1982	Thirumalai-rajan.	25 Ha.		8 Kms. raised.
15	Do.	Do.	Coleroon banks.	300 plants		Sida Range

541. Area Available for Bamboo Planting—

Bamboo Working Circle.

Serial Number.	*Name of the channel.*	*Length.*	*Remarks.*
(1)	(2)	(3)	(4)
		KILO METRE.	
1	Vadakadu Branch Channel	7	Pattukottai range.
2	Rajamadam Branch Channel ..	7	Do.
3	Nasuviniyar	1	Do.
4	Harichandranathi	6	Do.
5	Pamnini river	10	Do.
6	Kandaparichanar	6	Do.
7	Thirumalairajan	5	Kumbakonam range.
8	Sitta (Vellai AR)	6.5	Do.
		48.5	

542. Future Area available for Bamboo Gap—

Planting in Thanjavur Division.

Serial Number.	Year and name of channel.		Length of Channel. From	To	L.B. or R.B.	Area in Kilometre.
(1)	(2)		(3)	(4)	(5)	(6)
		(a) Thanjavur Range.				
1	1959	Grand anicut	19/25	22/85	Both banks	5.96
2	1964	Vennar	68/0	74/0	Both banks	9.60
3	1967	Vettar	80/3	82/3	Both banks	3.20
4	1969	Vettar	91/4	92/7	Both banks	2.08
		(b) Mannargudi Range.				
1	1969	Harichandranathi	86/0	92/5	Both banks	8.80
2	1976	Koraiyar	76/0	79/0		4.80
3	1972	Ponnukandhanar	6/0	6/0	Both banks	8.64
4	1968	Mulliyar	91/3	96/0	Both banks	9.12
		(c) Kumbakonam range.				
1	1970	Vettar Teak	86/0	90/0	Both banks	6.4
2	1974	Pandavaiyar	84/4	89/3	Both banks	7.80
		(d) Sirkali Range.				
1	1974	Palavar Tap Bit I	12/0	19/0	Both banks	11.20
2	1974	Palavar Bit II	19/0	25/1	Both banks	8.90
3	1975	Palavar Bit II	25/1	30/1	Both banks	8.20
4	1975	Palavar Bit II	30/2	35/0	Both banks	7.60
						113.20

Section 4—Method of Treatment.

543. *Silvicultural system.*—The prevailing Silvicultural system of selection thinning of clumps will be continued under a felling cycle of three years. Sufficient number of clumps should be retained and extraction shall be done without damaging the rhizone.

544. *Regulation of working.*—The regulation of working will be number of bamboos, depending upon the condition of clumps. The number of clumps to be extracted each clump will be decided by the Range Officer concerned.

545. *Sale Unit.*—Each Range will be considered as a sale unit. All bamboos extracted within the Range jurisdiction shall be stored in a central place where the marketing will be easy and where there will be demand for the produce and sold in public auction. There is no indication of bamboos flowering in the near future or during the currency of the plan.

546. *Felling Cycle.*—The prevailing practice of felling bamboos once in three years is found to be satisfactory throughout the State wherever bamboo occur from all points of view. Hence the same period of three years can be followed.

547. *Regulation of Yield.*—The yield will be regulated by number of bamboos. The present status of stocking is discouraging to forecast the number of bamboos to be extracted. The District Forest Officer will discrete the number to be extracted from each clump depending upon local conditions.

Section 5—Method of Executing Felling.

548. A clump may be said to have attained maturity when it commences to produce full sized clums. Thereafter it continues to enlarge by the formation of new branches to the rhizomes and more new culms are produced every year. This increase goes on up to a point. The investigation of the F.R.I. on an All India basis shows that the life of a culm is about 9 years varying from 4 to 14 years. The normal season at which new culms are produced appears to be July to September. But this may vary with young plants between May and October. But generally new culms are noticed only during the North-East Mansoon Viz., September October. An artificially raised bamboo plantation because fit for exploitation after eight years, as observed from the performance of the plantations raised in other divisions.

549. *Felling Rules.*—(I) No culm less than one year will be felled.

(II) Bamboo should not be cut at ground level. But it should be cut between the first and second node not more than 30 cm. height from ground level.

(III) A minimum of six culms of age over one year should be retained in each clump.

(IV) No culm should be removed with rhizomes.

(V) No bamboos should be cut and left in the clump.

(VI) The mature culms at the centre should be felled first, and the remaining mature culms should be evenly distributed in the clump.

(VII) Felling should be carried out only in the presence of a Forest Official not lower than the rank of a Forester.

(VIII) The bamboos to be removed should be marked before the felling is commenced and the marking should be checked by the competent authority.

(IX) Felling shall be made as far as possible in the direction opposite to that from which new clums appear.

550. *Enforcement of Rules.*—The rules now laid down should be strictly adhered to and enforced rigidly. The bad and unscientific management in the past,in other divisions had led to the total destruction of bamboos in the Forest. It is therefore, imperative on the part of the Range staff to insist the labour engaged by them to follow the rules scrupulously so as to ensure sustained yield.

551. *Collection Depots.*—Definite collection depots are allotted to each plantation and from the collection depots the bamboos should be transported to the sale depot under the cover of proper permits.

Section 6—Regulation of artificial regeneration operation.

552. Bamboo has been raised in this division in the failed patches of 1974 Teak plantations at the rate of 500 plants both in 1974 Pillai Voikkal Teak avenue plantation and 1974 Regunatha Cauvery Teak avenue plantation of Thanjore Range.

553. Subsequently during 1981, bamboo has been raised on tank beds, as furnished in the list enclosed. The earlier plantations were a through failure mainly due to biotic factors. Since the plants were buried deep by way of raising the canal banks by dumping earth.

554. Bamboos will be raised in the areas furnished in the list enclosed as it is an important species for which there is a great demand as props for banana which is cultivated over extensive areas. The lateral branches are used as fencing material. There is also a demand for bamboo or thatching and basket making by local people. Hence it will receive appreciation and admiati on if as many bamboos as possible are planted in the other plantations also.

555. *Nursery.*—Nursery will be raised two years ahead of planting standard raised mother beds will be formed and fresh certified seeds obtained from the Deputy Conservator of Forests Genetics will be sown at the rate of 450 grams per standard mother bed. The seeds may be lifted by ants and picked by birds. Therefore insecticides should be applied to word off ants and the beds covered with straw to prevent birds eating the seeds. Shade pandals providing light shade may benefit the tender seedlings. The nursery are again prone to damage by cattle, birds, Insects termites and other redents.

556. Soon after the germination is over transplant nusery beds of size 5m. × 5m. are fored as usual taking all care and formalities. When bamboo seedlings attain the height of about 15 cm. they may be carefully transplanted 15 cms. apart in the transplant nursery and watered. When they attain a height of 30-60 cms. they are again removed with a ball of earth so that the root system is intact and transplanted at wider space and flood watered. Usually one to 3 years old nursery raised seedlings give satisfactory results.

557. *Preparation of the Site.*—The area to be planted should be surveyed and demarcated with corner stones planted at each corner. All the unwanted growth should be cleared and bigger stumps uprooted so that there is no coppice growth suppressing the planted bamboos in the initial stages.

558. *Aligning and marking.*—The area snould be aligned at an espacement of 5m x 5m and marked on the ground with pegs in the month of May, June.

559. *Digging pits.*—Pits of size 60x60 cm. will be dug and this will be completed before the end of July. The pits are allowed to weather in the sun.

560. *Transport of seedlings.*—Bamboo seedlings uprooted with a ball of earth so as to keep the root system in tact and tied in gunny bags and transported to the planting site. The shoots can be trimmed to enable easy transport.

561. *Planting.*—The seedlings are transported from the nursery soon after getting a saturating premonsoon shower, to the planting site. The seedlings are distributed as the rate of one seedling per it and carefully planted after removing the gunny bags in which the earth with root system is tied. Care should be taken to see that no water logging takes place near the root system.

562. *Protection.*—The area planted with bamboo should be week protected by fencing them and appointing watches as the species is prone to grazing by cattle and damage by redents, pigs and donkeys.

563. *Weeding and Soil Working.*—One weeding and soil working may be given during the first year. During the second year one weeding and soil working will be done during October.

564. *Fending.*—One fending and cleaning operations will be carried out during the fourth or fifth year of planting so as to free the clumps from congestion. The District Forest Officer will decide and order this operation even earlier if he finds it necessary.

Section 7—Other Regulations.

565. Plantation journals in the prescribed register will be maintained for each platation separately.

566. *Record of statistics and control.*—The number of bamboos enumerated and extracted should be recorded in a separate register. Also particulars regarding the occurance of speradic gregrious flowering may also be noted.

567. *Control map and Records.*—The particulars of plantations shall be posted in the map annually.

The control forms prescribed for this working Circle are given in appendix No. XIX-D will be posted every year by the District Forest Officer.

CHAPTER VI.

MINOR FOREST PRODUCE WORKING CIRCLE

***Section** 1—General Constitution* :

568. The minor Forest produce working circle covers Thalainayar, Muthupet, Thuraikadu, Udayamarthandampuram Thamarakottai, Vadakadu, Maravakadu, Avanam and Pudupattinam Bit I Sodiakadu, Mudalai Madagu, Alakkudi, Kattur, Nagavalli, Kodiamapalayam, Gopalasamudram and Pudupattinam Bitt II. Reserved Forests and Maharajapuram R.L. under the control of the Thanjavur Division and this working circle will regulate the exploitation of all the items of Forest Produce which have not been dealt with separately under any of the prescribed working circles.

Section 2—Analysis of the crop:

569. The major area of the reserved forests of this division is scrub jungle and dry deciduous type of Forests deminated by thorny species,the M.F.P. obtained is much less when compared to other Forest Division. The unique features of the W.C. in this division is the right of fishing a major item of M.F.P.

570. *Kind of Produce.*—Tamarind, wood apple, Elandai, Illupai, Ettikottai (Nuxvomica) Konnai bark, Avaram bark ususfructs of coconut and Palmyrah Palms and Sondaikai are the important items of M.F.P. Besides these items there is always an ascending trend in the demand for Avaram bark, Tamarind, Sundaikai and Cashew nuts. The usufructs of cashew is dealt separately under miscellaneous regulations.

The following items of M.F.P. occur in small quantities both in the R.F. and in R.L. of this Division.

Section 3—Division of the area:

571. The M.F.P. Units of Tanjore Division are as given below :—

Serial number and name of the Unit.	*Location of the Units.*	*Name of the produce.*
(1)	(2)	(3)
1 Maharajapuram M.F.P. Unit.	Maharajapuram R.L. ..	Elandai fruits.
2 Tanjore Range Thohur Teak compact (account Trees 25 Nos.).	1957 Thohur coconut grove ..	Usufructs of Coconuts palm.
3 Tanjore M.F.P. Unit ..	All R.Fs. and R.Ls. except Kodiakadu R.F. and Elandai in Maharajapuram R.L.	All the 36 items of M.F.P. except coconut and Palmyrah in Udayamarthandapuram and Thohur.
4 Tanjore Avaram bark and Konnai bark unit.	All R.Fs. and R.L. except Kodiakadu R.F.	Bark of Cassia first and Cassia culata.
5 Thottam Fishing right ..	Chatram Forest Vadakadu Maravakadu and Thuraikadu.	Fish below in ' lengthwise given to the Fisheries Department.
6 Pits and puddles Fishing right.	Muthupet R.F.	Do.

572. List of minor forest produce items in Thanjavur Forest Division.—

Serial number. (1)	*Name of the produce.* (2)	*Botanical name.* (3)	*Uses.* (4)	*Remarks.* (5)
		(a) *Bark.*		
1	Avaram bark	Cassia auriculata	Taning	..
2	Konnai bark	Passia fistula	Do.	..
		(b) *Fruits.*		
3	Nellikai	Embica officiralis	Pickles.	..
4	Wood apple	Feronia bimonia ..	Edible	..
5	Tamarind	Tamarindus indica ..	Do.	..
6	Veerai	Drypetes sepiraia ..	Do.	..
7	Kalakkai ..	Carissa carandus ..	Do.	..
8	Elandai	Zizyphus mauritiana ..	Do.	..
9	Sundakai	Solanum pubescens ..	Pickles	..
10	Kodukkapuli ..	Inga dulces	Do.	..
11	Coconut	Cocos nucifera	Coir making and edible ..	
12	Palmyrah	Borassus flabelliber ..	Edible coir, coir making.	..
13	Illupadi	Madhuca longifolia ..	Edible (Flower fruits yield oil and cake.)	
14	Mango	Mangifera indica	Edible	..
15	Seapnut	Sapirdus emarginatus ..	Washing	
16	Custard apple	Armonoa squanmosa ..	Edible	..
17	Ealai	Manikara hexandra ..	Do.	
18	Naval	Syzygium cummini ..	Dc.	
19	Eacham	Phoenix sylvestris	Do.	
20	Zilupai	Madhuca India	Oil.	..
21	Noem ..	Azadiruchia indica ..	Do.	..
22	Pinnai	Calophyllum inophllum ..	Do.	..
23	Silk cotton	Bombax malabaricum ..	Stuffing and mattresses ..	..
		(c) *Seeds.*		
24	Perasenkotten	Thespesia pepulnea ..	Medical purpose	..
25	Ettikottai	Strychnosrux-Vomica ..	Yields stryco	..
26	Pongam	Pongania pinnata	Oil.	..
		(d) *Leaves.*		
27	Kayan leaves	Memecylon hyneanum ..	Dyeing	..
28	Facham	Phoenix sylvestries ..	For mat and rooting.	..
29	Kattalai	Agave americana	For broom fibre.	..
		(e) *Stem.*		
30	Permba	Calamus rotun	Basket making	..
		(f) *Flower.*		
31	Magizham	Mimusops elengi	Flowers ornamental seeds give oil.	..
32	Thazhai	Pandanus odaratissium ..	Flower	..
33	Kattamanaku	Jatrophagossypifolia ..	Fence plant.	..
		(g) *Other items.*		
34	Lime shells	.. ..	For lime	..
35	Koondaraipu (Grass) ..	.. ..	.. ..	..
36	Vembadampattai ..	Ventilago maderaspatana	Root bark	..

Note.—Items 5 and 6 will be sold in Public auction if they are not leased out to co-operative societies

2. The coconut area in Udayamarthandapuram R.F., is under lease as per Government Memorandum No. 86622/FR/III/71-25, F & F., dated 27th April 1976 upto 30th June 1984 for a period of 10 years. The practice of long term lease will be discontinued and in future, the coconut in Udayamarthandanpuram R.F. will be leased out as a separate unit annually in public auction. The period of lease will be from first January to 31st December.

Section 4—Method of Treatment:

573-A. *Agency of exploitation*.—The M.F.P. will be exploited through the agency of contractors. The right of fishing in the fishing units will invariably be allotted to co-operative societies of the locality. If there is no demand by co-operative societies the same will be leased out to the contractors in public auction.

573B. *Period of Lease*.—The lease period will be generally one year from 1st June of the suceeding year. Hence necessary publicity regarding the sale by public auction will be made well in advance and the sale will be conducted before the end of May.

574. *Other items of M.F.P.*—All other items of M.F.P. will be sold in public auction as one unit for the entire division with a lease period of one year between first July and 30th June of the succeeding year.

In order to avoid unnecessary human interference with the Wild Life of Kodiakadu R.F. and in view of the preservation, promotion and conservation of Wild Life no M.F.P. including Konnai and Avaram bark will be collected from the R.F.

575. The following conditions will be imposed on the contractors as regards to the collection of M.F.P. :—

1. Mazdoors engaged by the contractors for the collection of M.F.P. will be issued with suitable instructions to use sharp and appropriate implements such as sharp and small knives for the collection of Avaram and Konnai barks so that the live bark in the stool are not damaged by hacking.

2. Any misuse of knives will be treated as on offence under Forest Act.

3. All removals of M.F.P. from the least unit to the depot from the depot in the R.F. to a place out side should be covered by a prescribed permit.

4. All removals of M.F.P. should take place only in the broad day light, i.e., 6 A.M. to 6 P.M.

5. The quantities collected should tally with the quantities shown in the stock register maintained by the lessee and the quantities mentioned in the permits issued—

6. The lessees shall not sub lease the unit to persons other than his authorised agents.

7. Lopping of tree branches of any size for the collection of M.F.P. shall be prohibited.

Fingerlings caught in the fishing units which are below 15 Cms in length shall be handed over free of cost to the Fisheries Department.

576. *Fishing Leases*.—There will be three fishing leases as mentioned below and the existing practice of leasing out will be continued.

A. Muthupet Fishing lease unit :—

The right of fishing in the pits and puddles of Muthupet R.F. is given on negotation to the Fisherman co-operative societies as per G.O. Ms. No. 865, Food and Agriculture, dated 6th March 1965 subsequently modified in G.O. Ms. No. 1023, Agriculture, dated 31st March 1970. The same will be continue in accordance with the Government orders and subsequent modification from time to time. If the society is not willing to take up the unit on lease then the unit will be sold in Public auction.

B. Thottas Fishing Lease unit :—

The right of fishing in the streams, Puddles pits and creeks of Chatram Forests (Vadakadu, Maravakadu and Thuraikadu) will continue to be allotted to the Fishermen co-operative society by negotiation as per G.O. Ms. No. 865, Food and Agriculture, dated 6th March 1965 and the revenue realised will be credited to fiheries department. If the society is not agreeable to take up the unit, then it can be sold in public auction after scrupulously following all the proceedure of sale.

C. Thalainayar Fishing Lease Unit :—

Higher to the right of fishing in Talaniyar Reserved Forest was sold in auction by the revenue dep..tment along with the right of fishing in the creeks and streams in the adjoining unreserves. In order to get rid of the difficulties of dual control of leasing by one department and issue of permit by the other department, the Government has authorised the Forest Department in G.O. Ms. No. 189,Forest and Fisheries , dated 6th March 1979 and G.O. Ms. No. 894, Rural Development and Local administration Department, dated 7th July 1979 to lease out the right of fishing in the streams, pits Puddles and creeks of Talanayar Reserved Forest.

577. *Konnai and Avaram Bank.*—Konnai and Avaram bark in the entire division will be sold once in five years as a separate unit, with a lease period of one year from July to June of the succeeding year.

578. *Elandai Maharajapuram.*—At Maharajapuram Elandai trees occur over an area of 1.6 ha. for which there is a keen demand and it fetches on an average a sum of Rs. 450 per annum. There is also a steep rise in the revenue fetched from 1981—82 onwards. Hence it is prescribed that this unit can be sold as a separate unit with a lease period of one year commencing from July to June of the next year.

Section 5—Other Regulations.

579. The district Forest Officer will have the discretion to split up or club together lease units and to add items to a unit or delete items from a unit as the occasion demands.

Section 6—Control.

580. *Accounts* :—The contractor shall render accounts to the Range Officer concerned regarding collections and removals of various M.F.P. made by them by 10th of each month. The contractors should be insisted upon the furnish the accounts only in metric units.

The yield figures should be furnished annually even in the case of long term leases; or as soon as the collection is over for the year or along with the completion report. Separate accounts will be maintained for each lease units.

581. *Control.*—The control forms prescribed for the working circle as appended in No. XIX 'E' maintained annually and shall be posted by the District Forest Officer.

CHAPTER VII.

Miscellaneous Regulation.

Section I—Grazing.

582. Grazing will be permitted in all the Reserve Forests and Reserve Lands of this division except in areas that are closed to grazing from time to time for silvicultural or other reasons.

583. The object of Management in the Grazing are :—

1. To provide adequate pasture for the cattle of the villages adjoining the Reserve Forests consistant with the conservation of Forests without affecting in any way the objects of management of the various working circles.

2. To limit the grazing incidence to the extent possible to what the forests can sustain and incidentally to realise nominal revenue by levy of grazing fees for grazing inside the Forests.

3. To augment the grazing facilities by improving the area by planting with adequate fodder crop.

Certain specified areas will be permanently closed to grazing in the interest of Forest conservency while others will be closed from time to time under the orders of the District Forest Officer for temporary period for various reasons.

584. *Temporary closure.*—Certain areas which are fit for closing as decided by the District Forest Officer will be closed temporarily for Silvicultural reasons.

1. All Casuarina cashew, bamboo and other plantations which are susceptible to grazing will be closed for the first five years including the year of formation.

2. All fell areas of Eucalyptus hybrids will be closed to grazing for a period of three years as the cattle may damage the coppies shoots.

3. The area closed to grazing will not exceed 400 ha. at a time if the District Forest Officer temporarily closes an area as a Unitive measure in cases of fire cause due to negligence or incendiarism by the people of the locality or grazing under the provisions in the Forest Manual (G.O. Ms. No. 51, Development, dated 4th January 1940).

The District Forest Officer will report immediatley to the Collector and the Chief Conservator of Forests regarding the closure for grazing.

585. *Permanent Closure.*—The areas consisting of Mangrove forests will be permanently closed for grazing as it has to be maintained as Native Reserves as per Chief Conservator of Forest, Madras R.Dis. 19032/74-K4, dated 13th March 1975.

586. The annual grazing notification will be published in the District Gazette specifying the areas to be closed and the conditions regulating the grazing.

587. *Regulation of grazing.*—Grazing will be regulated by issue of permits subject to the usual conditions. All cattle except goats will be permitted to graze in the Forests. No discrimination will be made between the local and foreign cattle for the purpose of issue of grazing permits. Cattle taken from or into patta lands along recognised paths and roads through the Forests will not be regarded as committing trespass.

588. *Issue of permits.*—Grazing permits will be issued departmentally as per the existing practice all over the state.

589. *Grazing rates*.—The following grazing rates are in vogue since 1st July 1978 as per G.O. Ms. No. 228, Forests and Fisheries Department, dated 20th March 1978 Chief Conservator of Forest's Endt. No. 26633/78 E4, dated 6th April 1978 in Thanjavur Division.

Description of animal.	*Rates.*	
	Kodiakadu Sanctuary.	*Other Reserve Forests.*
(1)	(2)	(3)
	RS.	RS.
1. Sheep	2.00	1.00
2. Cow	4.00	2.00
3. Buffaloe, ass and horse	8.00	4.00
4. Elephant	30.00	30.00

590. *Grazing incidence*.—From the observation of the grazing incidence in past, it is perceivable that it is the maximum during 1981-82. This may be reduced to the minimum by discreet issue of grazing permits. A statement showing the grazing revenue obtained and grazing incidence in this division is appended.

APPENDIX.

STATENENT SHOWING THE GRAZING REVENUE REALISED AND THE GRAZING INCIDENCE OF THANJAVUR FOREST DIVISION.

Serial number.	*Year.*	*Grazing Revenue realised.*	*No. of cow units for which permit issued.*	*Area opened for grazing in hectares.*	*Area closed for grazing in hectares.*	*Grazing incidence per cow unit in hectares.*
(1)	(2)	(3)	(4)	(5)	(6)	(7)
		RS.				
1	1970-71 ..	2,405.00	..	..	..	..
2	1971-72 ..	4,321.00	..	42.411 Sq.Km.	13.1918 Sq.Km.	..
3	1972-73 ..	4,037.00	4,037	146.31 Sq.Km.	34.17 Sq.Km.	3.62
4	1973-74 ..	3,599.00	3,599	..	21.52 Sq.Km.	..
5	1974-75 ..	1,805.00	..	..	..	..
6	1975-76 ..	2,705.00	2,880.5	161.3061 Sq.Km.	10.1166 Sq.Km.	5.6
7	1976-77 ..	1,319.00	..	..	..	..
8	1977-78 ..	1,265.00	1,197	38.3115 Sq.Km.	..	..
9	1978-79 ..	1,943.00	971.5	425 Ha.	12599 Ha.	4.37
10	1979-80 ..	1,642.00	821	1275.52 ha.	15125.4	1.55
11	1980-81 ..	1,922.00	959	1275.52 ha.	15125.48 ha.	1.33
12	1981-82 ..	4,986.00	2,116	14605.49 ha.	1795.51 ha.	4.9
13	1982-83 ..	4,325.00	..	146.05498	17.9551 Sq.Km.	..

591. *Grazing year.*—The grazing year will be from 1st July to 30th unit for this succeeding year.

592. *Grazing Unit.*—The whole of Tanjore Division will be considered as one unit for this purpose.

593. *Cutting and removal of fodder grass* :—Cutting and removal of fodder grass may be permitted free of cost for bonafide domestic use from the reserve forests except from closed areas.

594. Removal of grass in cart loads can be permitted by collecting a nominal fee of Re. 1 (one) per cart load (*vide* G.O. Rt. No. 1332, Agriculture Department, dated 6th June 1968).

Section 2—Mangroves.

Section 1—General Constitution and Character of the Vegetation.

595. *General Constitution.*—This working circle comprises of the Mangrove Forests of Muthupet reserved forests and the unexploited area of 121.41 ha. in Tamarakottai feeling series proposed in the previous plan. Pudupattinam forests situated at the mouth of coleroon river included in the mangrove working circle under the previous working plan is excluded in this plan period in view of the poor and unsalable nature of growth. The mangrove forests of Talanayar, Chatram (Thurakadu) which have been worked during the previous working plan period will be given complete rest during the currency of this plan. As far as possible areas with blanks and scanty growth have also been excluded from the working circle.

596. *Character of vegetation.*—The areas proposed fall under Champion's Tidal Swamp forests (mangrove forest) a description of which is given in Chapter II of Part I. The mangrove forests develop along the seas-coast between the low and high tide limits on fresh aluvial deposits. The floristic composition in a mangrove forest varies greatly within short distances depending on the degree of salanity and the duration of inundation during the different tides. They exhibit distinct zonations and are confined along the fringes of lagoons and streams. The mangrove forests are basically of a transitry nature exhibiting characteristic variation and irregularity in growth and cannot be regenerated in situ. They exhibit special adoptions such as stilt roots.

597. *Demarcation of closed areas.*—The closed areas will be demarcated by means red colour sign boards displayed at salinet points written both in English and Tamil. In addition' the information of closure will be informed by toma in all the places where people used to assemble and also the particulars of closure will be published in the District Gazette.

598. *Improvement of water facilities.*—There are three wells, two at the game sanctuary and one at the foresters quarters at Kodiakadu village. The wells may be maintained at least once in three years by baling out all the waste and removal of the silt.

Similarly there are three check dams in the Kodiakadu game sanctuary. They may be maintained annually during the summer months by desilting them and replacing the bunds so that more rain water can be stored for the wild animals. The unwanted thorny vegetation may be removed and the water source kept clean, neat and tidy.

599. *Miscellaneous regulations.*—It may be insisted that the cattle allowed to graze inside the Kodiakadu reserve forests game sanctuary are inoculated against contagious diseases. Only inoculated cattle should be permitted to graze in the sanctuary area.

2. A grazing map for the whole divisions showing all the areas closed for grazing may be prepared annually and posted up-to-date and maintained at the District Forest Officer's Office.

3. Control forms prescribed in the Appendix I may be posted the end of each grazing year at the District Forest Officer's Office.

4. Avicennia officialis is the predominating species which is useful as fuel and small timber. Other species are inferior as fuel due to irritant. Smoke produced by them and are not in much demand. The bark of the most of the mangrove species is rich in tannin although it is not used commercially so far.

5. Thillai (Exceecaria agallocha) is not exploited because of the injurious effects such as blindness and blisters on the skin said to be caused by the exudation of latex from it. Further Thillai is less favoured as fuel due to irritant smoke produced by the same.

Division of the area.

600. The list of mangrove forests is as follows :—

Serial number and name of the reserve forest.	Total area of the Reserve Forests.	Remarks.
(1)	(2)	(3)
	Ha.	
1 Muthupet	6,803.01	Mangroves occur only along the fruits of the reserve forest in a narrow belt.
2 Thuraikadu	2,636.54	Do.
3 Vadakadu	320.28	Do.
4 Maravakkadu	1,356.07	Do.
5 Tamarankottai	529.66	Do.
6 Talanayar	1,236.29	Do.
7 Pudupattinam Reserve Forest	152.20	Whole area under mangrove.

Method of treatment.

601. The predominent species in the mangrove forests in Avicennia, which is also economically most valued among the mangrove species. Natural regeneration of Avic cennia is plentiful on account of vivparous seeds which are produced in abundance.

602. *Regulation of grazing.*—As a result of heavy grazing, Avicennia is not allowed to attain a height above the reach of cattle. Hence as prescribed in the previous working plan the entire area of the working circle is closed to grazing permanently. The area will be fenced so that stray cattle are prevented from entering the mangrove area and damaging the tender regeneration.

Further working of mangrove forests have been suspended from 1975, as per Chief Conservator of Forest's R. Dis. No. 19032/73 K4, dated 13th March 1975.

SECTION 3— CASHEW.

General Constitution and Chacter of the Vegetation.

603. Cashew (Anacardium occidentale Linn) belongs to the genus Anacardium. All the six species of the genus are natives of south America. Cashew is supposed to have originated in South-East Brazi.. Acaiu is the name by which the native Tupi Indian of Brazil calier. This became caiu in Portuguese, cashew in English and French. The majority of languages in India and South-east Asia derieves names from Caju. It is from the west coast of India that cashew is supposed to have been dispersed into south-east Asian countries. The earliest record of cashew in Africa dates back only to 1790. The Portuguese introduced it in India early in 16th Century to check soil erosion along the coast of Kerala. It is now cultivated extensively all along the Eastern and western coasts of south India upto Orissa in the east and Bombay in the west. It is a medium sized evergreen tree with a large spreading crown. Cashew is considered to be a waste land or marginal land crop growing where no other crop can grow. It can be cultivated in almost all soils from the sandy sea coast to the laterties and upto an elevation of 700 metres. But it does not grow in areas subject to frest and heavy due. It comes up well in red sandy loams and light coastal sands. It is usually propogated by seeds. But vegetative propagation through grafting and layering has been highly successful and is being increasingly used in raising plantations. It is hardly drought resistant evergreen and a strong light demander.

All parts of the trees are useful. The bank yields yellow or reddish gum which is slightly soluble in water and useful for tanning and as an insect repellant. The wood is used for making packing cases, as fuel for building boats and for making charcoal in Ceylon and Burma.

604. *Medicinal use.*—An acrid oil obtained from the tree is used to cure blisters, warts, corns and ulcers, cashew apple eaten raw is a remedy for scurvy.

605. *Kernal.*—The most important of all is the Kernal which is eatern raw of fried, Salted or sugared and is used as and ideal cock tail snack all over the world. They are rich in protein content. Vitamins A and B Iron, Copper, manganese and Siuphur. The energy value of 1 Kg. of kernels is siad to be equivalent to that of 15 Kg. of oranges. 12.3. Kg. of Photates, 3.7 Kg. of steak or 3.5 Kg., of bread. The weight of the Kernel is about 33 per cent of the total weight of the nut.

The expert of cashew kernals earned our country Rs. 1,190 million of foreign exchange in 1976. The principal buyers are the U.S.A. U.S.S.R. and West Germany. In this trade India has been holding a virtual monopoly in the world market. We entered the market in 1920 when once ship load of 10,610 tonnes of processed kernels was exported to the U.S.A. Ever since India's trade in this commodity has been growing. It provides employment to nearly 1.5 lakhs persons through 300 and odd registered factories. The workers are mostly women whose skill is unequalled in such operations as decortication removal of husk and peeling.

India has only 4,18,000 hectares under this crop, producing 1,84,000 tonnes of raw nuts. Its contribution is only 26 per cent of the total world production. The other major producers are Mosambigue (37 per cent) and Tanzania (24 per cent). India's production is sufficient only to meet one-third of the total requirement of the installed capacity of her processing factories. In order to keep the factories running throughout the year, we have been importing raw nuts from East African countries. But in the last few years the imports hae been steadily dwindling. The situation has been accentuated by the African countries taking to processing and setting up mechanised units.

Cashew processing consists of cleaning humidifying and grading followed by roasting or other methods of CNSL extraction and decortication. The shells are then processed for extraction of residual CNSL. The Kernels are dried, pecked, rehumidified, graded and packed. Humidifying protects the Kernel against the ill effects of roasting. Grading is important since nuts of different sizes cannot be roasted homogenously.

Peeling is done after drying the Kernels in an over at 70 degree C for 4—8 hours. The kernals then shrink from tester which becomes brittle and can be easily removed peeling is usually done manually. The first grading is also done at this stage. The kernels are then kept in a high humidity room for a few hours, until they have a moisture content of 5 per cent. This prevents excessive breakage are then, 'graded' for trade according to specifications. The grading of whole kernals is based on 'counts'—that is the number of kernels per pound, there are eight grades recognised by the Cashew export promotion council for 'whole' kernels. Then there are scorched wholes (SW) spiits (s) Putts (B) pieces (P) Baby pits (BB), etc. The kernels are packed in tins or other contaners. To prevent deterioration the air in the tin is removed and it is filled with carbon dioxide. The containers are then sealed.

606. *Cashew nut shell liquid.*—The kernal is enclosed in testa which is enclosed in a shell of about 13 m. m. thickness. The shell contains a honey comb structure with a dark reddish brown liquid called the Pericarp fluid of the nut. Raw shell oil blisters the skin and contains mettalic impurities and traces of sulphur and is called Cashewnut shell liquid. The CNSL content of the nut is up to about 16 per cent of the total nut weight. It contains chiefly two naturally produced phenolic compounds viz'. anacardic acid (about 90 per cent. a derivative of saly cylic acid and cardol about 10 per cent) a resorcinol. The liquid lends itself to ploymerisation by various methods and therefore there are innumerabie industrial applications for it. Cashew lacquer is used for insulation, protective and decorative coatings. Cashew cement a hardened gel is employed in cementing of floors subject to Chemical attack. Laminating resins produced from CNSL are used for paper, cloth and glass fibre and resins, of synthetic rubber. CN SL has found its way into the manufacture of breaklinings and clutch-facing. The demand forthis liquid is mostly from the U.S.A., U.K., Japan and Australia. The shells after extraction of oil are burnt as fuel.

607. *Cashew apple.*—(1) The cashew apple is really the swollen peduncle and is soft and juicy, containing vitamin 'C' in abindance. The apple weighs seven times that of the nut.

(2) The Central Food Technological Research Institute, Mysore has succeeded in preparation of an irritant free wine from the juice of the apples without losing the itamin 'C' content. The cost of preparation of the wind comes to Rs. 5.50 per bottle.

(3) Cashew apples can be used for the preparation of syrubiam and candy and the juice can be blended with the juices of other fruits such as lime, grape, mango, pine apple etc., But little or no use has been made of the apples so far, the bulk of them being used as cattle feed or manure.

608. *Casew apples for fenny.*—(1) Cashew apples are put to economic use only in Goa, where it goes into the making of fenny. Infact to the goans the apples are more important than the nuts. There are more then 1,000 licensed distilleries in Goa working during the cashew season. They make fenny with an alcohol content of 30 per cent.

(2) Juice is collected from the apples and left to ferment. Then it is distilled and the product is cooled for few hours in water. Distillation of about 90 litres of juice will give approximately one-fifth the quantity of arrack which contains about 15 per cent of alchohol. This is again distilled after adding varying quantities of fresh juice and for arrack and water. About 150–160 apples will give 18 litres of fresh juice and one Kilogram of nuts.

609. *Cashew testa.*—The thin skin covering the kernel namely the testa contains about 60 per cent tannin and, much work on it has been done in the Central Leather Research Institute, Madras. It is estimated that about 500 to 600 tonnes of tannin extract can be obtained from the 3,000 to 4,000 tonnes of testa annually available in the various cashew factories in India.

Division of the Area.

610. Area of the present working circle is 71 ha. as detailed below :—

Serial number.	*Year of plantation.*	*Name of the plantation.*	*Extent in ha.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)
1	1969	.. Avanam cashew plantation	31 ha.	
2	1977	.. Sengipatti cashew plantation	40 ha.	Failure.

All the other plantations raised since 1958 have been handed over to Tamil Nadu Forest Plantation Corporation on least from 1st August 1974 as follows :

611. List of Areas Leased out to the Tamil Nadu Forest Plantation Corporation (TAFCORN).

Serial number and name of the forest.	*Name of the taluk in which the area occurs.*	*Area in hectare.*	*Status.* *Reserve Forest.*	*Status.* *Reserve Lands.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)	(6)
1 Ettithalai	Aranthangi	69.48	Reserve Forest.	..	..
2 Neppugai	Do.	387.25	Do.	..	..
3 Kurumbur	Do.	346.52	Do.	..	..
4 Kamapuram	Orathanadu	235.34	Do.	..	..
	Total ..	1,038.54			
5 Keeramangalam ..	Aranthangi	7.58	..	Reserve Land.	..
6 Sendangudi	Do.	110.59	..	Do.	..
7 Merparanikadu ..	Do.	156.47	..	Do.	..
	Total ..	274.64			

612. *Analysis of the crop.*—Out of 36 ha of Avanam Reserve Forests 31 ha has been raised under cashew (Auacardium occidentale) during 1969. Out of 5,800 casher plants raised there is a stock of 5500 plants after thinning during January 1983 accounting to 94.83 per cent as on 31st August 1983. Though the stocking is satisfactory the yield is far from it. The yield is steadily decreasing when compared to 7,351.5 Kgs. in 1980–81 to 1920 Kg. in 1983–84. The intensive cultural operations if properly carried out any map augment the yield.

613. During 1977 cashew has been raised over 40 ha in the land belonging to the Sengipathi T. B. Sanitorium. Out of 5,815 plants raised, there are only 160 cashew trees standing. The yield obtained is ridiculously poor. It is stated that only 180 nuts have been collected during 1983. This cashew stand may be restocked and fenced allround to protect it effectively. All the other cultural operations may be carried out to increase the productivity of the plantation.

Method of Treatment.

614. *The treatment proposed aims at.*—(1) Maintaining the existing cashew plantations and improving them by restocking the failed patches with cashew to meet the growing demand for cashew nut, (2) continuing the exploitation of cashew plantations by resorting to departmental collection in case there is no demand or the price realised in sales is not reasonable, (3) to increase the productivity of cashew plantations by carrying out suitable cultural operations such as thinning soils conservation measures restocking the gaps, manuring climber cutting and soil working, clearing the intervening jungle growth etc., and (4) potecting the plantations from pests and diseases by timely spraying of presticides and chemicals.

615. *Silviculture of Cashew.*—Though a horticultural tree, cashew is hardy and drought resistant. It thrives under a variety of soil and climatic conditions but sandy soils are best suited to it. It grows on laterite soils on the west-coast and does equally well on sandy soils of the east-coast having rainfall of only about 90 Cms. Cashew is a waste land crop in Thanjavur district and it grows well on deep loamy soils with adequate soil aeration.

616. The crop is usually grown from seed and it can also be propogated by grafting and layering.

617. Cashew plants produce flowers on the twigs and branches of current season only. The factors which promote better growth of the vrown are directly responsible for better yield. Out of the two growth flashes in the season, it is the earlier phase from October to January that gives rise to panicles while the later flashes of March to May are invariably unproductive. The hermaphrodite flowers occur only during the middle of the flowering season while they are staminate, flowers at the beginning and at the end of season. This accounts for the drying up of inflorescence during certain period of flowering due to the shedding of staminate flowers and this should not be mistaken for disease. During the peak production of harmaph rodite flowers (i.e.) January to February) there is ordinarily neither wind or rain. If a shower are two occurs at this time a bumber yield is obtained. If there is heavy dew fall during this period the inflorescence is scorched resulting in poor yield. Similarly cloudy weather results in the shrivelling or drying up the inflorescence.

618. The duration of ripening from the date of pollination varies from 45 to 70 days. When the apple is fully ripe the nature for havesting. Picking of nuts is done daily as all nuts do not ripen at the same time. March-April are the busiest and peak picking season.

619. As the yield of the tree depends on the production of hermaphrodite flowers and as the incidence of production of the harmaphrodite flowers in the paniclea is an inherent feature of the species and cannot be manipulated by cultural operations the selection of proper high yielding mother trees is of prime importance. The distance between the another and stigmatic and is also an important factor in obtaining better yields. Shorter style lengths and lower rations of style length to stames length are responsible for high yields. This factor is also an important one in the selection of mother trees.

620. The rainfall has got great influence on the yield, viz. (1) in years of low rainfall during the monsoon the yield tends to be sub-normal (2) lack of adequate rainfall results in the reduction of nut size (3) rainfalls in March during the course of development of the fruit induces large nut size. (4) prolonged periods of cloudy or rainy weather during flowering season effects the yield (5) heavy rains in October-November before flowering enhance the yield considerably and (6) considering the above factors bumper yields can be expected once in three years.

Regulation of proparatory works and planting.

621. *Pitting.*—Pits of 30 Cm x 30 Cm. x 30 Cm. will be dug departmentally during July in the ploughed areas after aligning. Pitting will be completed by the end of July and the soil allowed to weather for sometime after which it is refilled just before dibbling.

622. *Dibbling.*—Before dibbling, the seeds will be immresed in water. All floating seeds will be rejected and only those which sink will be dibbled. The soil in the refilled pits will be scopped out and the seeds dibbled with the stalk and facing upwards in a slanting position at a depth of 5 to 7 Cms. This is easily done by holding the seed with the stalk and upwards slanting between the thumb and index finger and push ng the seed into the soil. The best time for dubbling is the month of August, if there are rains at that time.

623. 1. *Replacement of Casualities.*—All Casualities will be replaced by dibbling seeds during the first year itself as an when noticed. No replacement should be done after November by which time the monsoon generally weakens.

2. If there are more than one seedlings at a stake, the most vigorous one will be retained pulling out the other at the end of the monsoon season during the year of formation. During the second year casuality replacement will be continued.

624. *Fencing.*—Both the cashew plantations may be fenced with barbed wire and stone pillers so as to prevent cattle grazing and theft of cashewnuts, effectively.

CULTURAL OPERATIONS.

625. *First Year.*—one weeding along with soil working by manual labour to a diameter of 1 m around the plant to a depth of 15 Cm. to 20 Cm. will be done with pickase during December leaving 10 Cms. round the plant undisturbed to ensure safety of the plant and its root system. In addition to weeding and soil working climber cutting and cutting back the intervening growth will be done.

626. *Second year.*—The same operations as in the first year will be carried out.

If any of the plants are found to bear flowers during the second year, the flower stalks should be nipped of by hand during the weedings.

627. *Third Year.*—Soil working to a depth of atleast 15 cms. and to a diameter of 1 m around the plant may be done if necessary only to backward plants to boost up growth.

628. Thereafter cultural operations such as climber cutting, clearing the intervening growth, soil working etc., will be carried out regularly once in 15 years in all the cashew plantations.

Clearing of Intervening Jungle Growth.

Even after the original jungle growth is completely clear felled while preparing the site for planting it, comes up again in the succeeding years and tends to suppress the cashew. Hence it is necessary to cut back or uproot the intervening jungle growth periodically atleast once in 5 years to promote the growth of cashew. This will be done either manually or by using tractors.

629. *Soil Working.*—Intense soil working considerably improves the growth of cashew plants and also increases the yield. It ensures grater infiltration of prescipitation and better exeration of soil. Though it will be ideal to work the soil every year it is not only costly but also not possible due to large areas tackled under cashew. However it is essential to work the soil atleast once in 5 years. Hence it is prescribed that soil working will be done departmentally in the 5th year and thereafter once in 3 years regularly. The soil should be worked to a depth of atleast 15 cm. to 20 cm. once in 5 years. All unwanted miscellaneous growth in the plantation will be clearfelled before taking up soil working. Since manual working will be costly and the country ploughs do not work the soil to sufficient depth, tractors will be preferred with advantage as the area to be covered in each range is farily large. Tractor ploughing will be done once in 2 years in between the lines if there is space for the tractor to move. Otherwise soil working will be done by manual labour to a diamter of 3 m. around the plant to a depth of atleast 15 Cms. by pickaxes.

630. Kolinji will be sown in the alleys between cashew trees after each soil working to improve soil fertility, to keep down the weed growth and to act as a soil cover to prevent soil erosion. This can be ploughed back at each ploughing and sowings repeated. Kolini although an annual is of the nature of a self sown crop and if repeatedly sown for 3 or 4 seasons at most, the crop will establish itself every year with seeds shed into the soil. It is leguminuous crop and is an excellent green manure apart from its capacity to fix atmospheric nitorgen. The crop can be ploughed in situ by tractor once in five years and thus the soil enriched. If there is excessive growth in certain areas the Kolinji can be cut and removed for green manure purposes which will provide an additional revenue.

631. Soil working will be done between July and September before the on set of North-east monsoon. The sequence of areas to be taken up for soil working during each year of the plan period according to the prescriptions given above is furnished below. Further soil working for the succeeding 5 years is also given in case the revision of the plan is delayed.

632. *Thinning.*—Cashew is a horticultural crop yielding fruits and nut which requires plenty of sunlight and aeration to produce maximum quantity of flowers, fruits and nuts since the initial espacement is 7m x i m and cashew has got a wide spread, periodical thinning is necessary to relieve congestion.

As the trees differ from one another significantly in vigour and yield only to a selective thinning will be adopted aiming at the removal of less vigorous and less productive trees. The object of thinning will be to retain maximum number of good yielders and at the same time to remove congestion.

633. Thinning will be done only when trees in a plantation begin to over lap one another. Trees will be marked for thinning in March-April when they are in fruits. Factors to be considered at the time of thinnings, are crown development, intensity of flowring and fruiting general vigour of the tree, etc. The following rules are prescribed while marking the trees for thinning :—

(*a*) No trees will be marked where there is no congestion.

(*b*) If there are two good trees in a line with poor trees on either side both the good trees will be retained.

(*c*) Plants poor in health, vigour and yield will be marked for removal.

(*d*) When there are three or more trees of equal vigour and yiled the alternate plants will be marked.

(*e*) To the extent possible good yielders will be retained in preference to the poor ones.

634. *Other Regulations Method of exploitation.*—The usufructs of cashew will be collected departmentally as the area is small and if leased out to the contractors the interest of the department will be lost and it will be an impediment to the improvements suggested.

635. *Plant protection measures.*—Cashew is susceptible to a variety of pests and diseased which effect the yield and the stand. Hence prophylactic and control measures have to be undertaken in the plantations regularly.

636. Though most of the pests and diseases are well known the exact chemicals and methods used in the prevention and care are not fully established and standardised. There has been no disease or pest in an epedemic form so far in this division. It will not be practicable to draw up a detailed programme of pest and disease control. The only method known are sparying or dusting the crop with chemicals. It is therefore suggested that each plantation may be sprayed with 5 per cent BHC and i per cent Bordeauz mixture once in October-November when the trees develop first foliage and gain in December-January after flowering has set in, 25 per cent Parathion may be used as an alternative to 5 per cent BHC in the case of insect pests. The measures suggested above are of prophylactic nature drawn up on the basis of recommendations made by various specialists. The expert knowledge of crop protection officers, entomoligists and mycologists may be made use of in deciding on the chemicals, season and method of spraying as fresh knowledge is made available.

637. The execution of remitial measurss in the departmental plantations allone is rendered in effective by the spread o f infection from the adjoining private plantations where suchcontrol measures are seldon undertaken. Since theGovernment and private plantations form contineous and compact blocks of large extents it would be useful to resort to aerial spraying on the entire tract at a resonable costs. The private planters may be approached to pay proportionate costs, and if they were unwilling the cost may be initially borne by the Government and collected instalments from the private owners. Otherwise protecting only the departmental plantations and leaving the adjoining private plantations unprotected will not be in the interests of the departmental plantations.

638. *Pesticides.*—Application of endrin should be done at the time when first flush of leaves appear. Second spraying with Fytolon and endrin can be done when the crop is flowering.

639. *Manuring.*—Application of fertilizer is necessary to increase the productivity in cashew. Chemical manure will be preferred than inorganic ones. N. P. Mixutre of 9 : 9 : 9 ration at the rate of half to one Kg., will be applied per plant and intimately mixed with soil. This application will be done before the end of November when there is optimum moisture in the soil so that the plant may utilise the manure which the available moisture in the soil. Fertilizer application will be done year after year regularly in the same area. Fertilizer will be applied in the trench formed around the plant during the process of soil working. During soil working a trench of 30 to 40 cms. wide with a depth of 5 to 8 cms. is formed at a distance of 1.5 m. from the plant. Trench

will be formed around the plants according to the crown width of the plant for application of fertilizers to faciliate the obsorbtion of the same by the root since there is close correlation between the root spread and crown width.

640. *Soil Conservation.*—Soil conservation works such as contour bunds, check dams, gully plugs construction of waste weirs etc., will be done in cashew areas. Contour bunds will be formed as a part of preparatory work following tractor ploughing in Kumari areas and the bunds will be consolidated by planting suitable species such as Ipomes, Aloe, agave Jatropha, Palmyrah, etc., during the year of formation itself.

641. *Grazing.*—No grazing will be allowed in the cashew plantations as cattle trampling will cause the soil compacted and the seedlings and splings will be trampled, and the efforts of restocking will be defeated.

642. *Fencing.*—As suggested in the previous paragraph an effective barbed wire fencing with stonepillars will be erected, all round the plantations.

643. *Control.*—The control forms relating to this working circle are given Appendix XIX-F They should be posted as soon as the operations are carried out and shall be completed at the closure of the financial year.

Section—4, Eucalyptus Teretocornis.

Eucalyptus Hybrid.

Analysis of the crop :

644. *Eucalyptus teretocornis* (*Mysore gun*).—Popularly known as Eucalyptus hybrid is an exotic from Australia, raised over extensive areas in India, particularly in the southern region. It is a most successful species at low elevation. It is a strong light demander and tolerakes shade to some extent. It is an excellent coppies and wind firms. This species, being a fast growing species and the wood used for paper pulp, and locally used as small timber in the leaves can very well be grown on the canal banks and tank beds. It does not suit, soils which are very Saline.

645. *Espacement.*—Eucalyptus teretocornis can be growing at closer spacing biz 2x2m.

646. *Planting.*—Eucalyptus teretocornis contains seeldings six months old may be planted in 30x30x30 cm. pits during the monsoon season, wherever there are failed patches of other species such as teak, Bamboo, Cahsew etc.

647. *Rotation.*—A rotation of 8 years is being followed in the cause Eucalyptus hybrid plantations. The same will be continued.

648. *Other regulations.*—In case if there are failures in patches, in Eucalyptus plantations the patches will be covered by planting the same species., after felling the area so as to ensure a uniform crop over the entire area and that the plantation is brought to full stocking. A list of existing eucalyptus plantations is appended. Eucalyputs teretocornis comes up very well in rich porous soil. Hence weeding and soil working to the replaced seedlings are essential during the first and second year of planting. This spcies is very much susceptible to root attach by termites. Hence application of insecticides like B.H.C. 10 per cent powder at the time of planting and also at the beginning of the summer season will be benificial.

2. During the second and subsequent rotations, a maximum of three good vigorous coppice shoots may be retained and other whippy and weak coppice shoots may be removed, without causing injuries to the stools.

3. It should be insisted that only saw is used for felling and the cut should be as low as possible and in no case the stool should be more than 15 cm. from the ground level. The cut should be a slanting once so that the rain water if any may not stagnate on the top and deteriorate the stool.

649. LIST OF EXISTING EUCALYPTUS TERETICORNIS PLANTATIONS IN THANJAVUR DIVISION

Serial number.	*Year*	*Name of the plantation and Range.*	*Area in. hectares.*	*Length in Km.*	*Expenditure incurred.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)	(6)	(7)
(*a*) *Thanjavur Range.—*						
1	1970	Kambiyarnatham	2.00	..	..	....
(*b*) *Kumbakonam Range—*						
2	1975	Maharajapuram	8.00	..	..	....
3	1976	Do.	10.00	..	4,491.75 15,152.00	....
4	1977	Coleroon		10	11,109.00	....
5	1978	Coleroon	10.00	..		....
(*c*) *Sirkali Range—*						
6	1976	Odaiyar	15.00	..	..	....
7	1976	Nandodiyar	5.00	..	..	....
8	1977	Gopalasamudram	7.00	..	9,063.00	....
9	1979	Do.	1.50	..	837.50	....
(*d*) *Pattukottai Range—*						
10	1976	Udayamarthandapuram ..	10.00	..	4,144.42	..
11	1977	Do.	5.00	..	6,752.30	....
12	1982	Reguramasamudram Channel ..	..	10	..	Raised by Social Forestry Range.
13	1982	Veerakurichi Channel	..	1.23	..	Do.
14	1982	Nariyar poramboke plain	2.5	..		Do.
(*e*) *Orathanadu Range—*						
15	1982	Ettipulikkadu channel	5	..	..	Do.
16	1982	Vadakadu channel	5	..	..	Do.
(*f*) *Peruvurani Range—*						
17	1982	Ananthavallipuram channel ..	12.50	..	..	Do.

650. LIST OF AREAS PROPOSED FOR PLANTING EUCALYPTUS TERETICORNIS—IN THANJAVUR DIVISION (THIS INCLUDES AREA PROPOSED FOR PLANTING SOCIAL FOREST DIVISION ALSO.

Serial number.	*Name of the area.*		*Area in hectares.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)
1	Nagavalli Reserve Forests		38.81	Thanjavur Range.
2	Udayamarthandapuram Reserve Forest		14.51	Pattukottai Range.
			53.32	

651. STATEMENT SHOWING THE AREA OF EUCALYPTUS HYBRID PLANTATION FELLED AND REVENUE REALISED FROM 1978–1982 IN THANJAVUR DIVISION.

Serial number.	*Name of range.*	*Name and year of plantation.*	*Felled in year.*	*Area in hectares.*	*Revenue.*	*Yield in tonnes.*
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	Sirkali	1967 Gopalasamudram Eucalyptus Plantation.	1975–76	16.64	31,005.00	850.0
2	Kumbakonam ..	1968 Maharajapuram	1976–77	17.40	33,001.00	820.0
3	Thanjavur	1968 Villangudi ..	1976–77	10.92	6,550.00	166.0
4	Kumbakonam ..	....	1980–81	..	34,000.00	312.885 727 E.H. trees handed over to Seshasayee Paper and Board Limited by Research Range Chief Conservator of Forests Ref. No. 64842/80-81, dated 20th July 1980.
5	Kumbakonam ..	....	1980–81	254.00	..	3.3 Handed over by Research Ranger to the Seshasayee Paper and Board Limited Chief Conservator's Reference No. 108625/79, dated 25th February 1981.
6	Thanjavur	1973 Coleroon plantation.	1981–82	50.0	1,600.00	199.650
7	Kumbakonam ..	1975 Maharajapuram	1981–82	20.0	..	....
8	Sirkali	1974 Gopalasamudram	1982–83	..	4,395.00 (for serial numbers 8 to 13)	.... Allotted to the Seshasayee Paper Mills, Pallipalayam (for serial numbers 8 to 13)
9	Kumbakonam ..	1975 Maharajapuram	1982–83	..		
10	Thanjavur	1973 Coleroon ..	1982–83	..		
11	Do.	1959 Poondi (compact)	1982–83	0.728		
12	Do.	1959 Saliamangalam (compact).	1982–83	1.637		
13	Do.	1959 Kambaranathan	1982–83	9.518		

SECTION 5.

652. *Salmalia Malabarica Samul.*—Salmalia malabarica (Samul) is a good choice where alluvical soil rich in sand occurs and it grows to a very big size in the natural forests. The wood is fort light and most suitable for match wood. It is also used for rough planting and plywood industries. A few seedlings may be planted in between teak and bamboo where the soil is ideal for this species.

SOFT WOOD PANTATIONS.

Specials : Salmalia Malabarica.

Serial number.	*Name of the range.*	*Year of plantation.*	*Name of plantation (Locality).*	*Area in hectares.*	*Amount spent.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	Thanjavur	1980	Kovilady	10.00	..	Failure.
2	Do. ..	1980	Thogur (compact) ..	10.00	..	Do.
3	Kumbakonam ..	1980	Valappar	20.00	..	Do.
4	Do. ..	1981	Thirumalai rajan ..	20.00	..	Do.
5	Chidambaram ..	1982	Nandalar]	25.00	..	Raised bv Chidambaram nge.

Serial number.	Name of the range.	Year of plantation.	Name of plantation (Locality).	Area in hectares.	Amount spent.	Remarks.
(1)	(2)	(3)	(4)	(5)	(6)	(7)
6	Chidambaram ..	1981	Vadavar	20.00	..	To be handed over to Cuddalore Division.
7	Sirkali	1981	Umaiyalpathy ..	20.00	..	....
8	Do.	1982	Pachaperumalnallur Kappiakudi Manalagaram.	20.00	..	....
9	Mannargudi ..	1980	Vadavar No. 1 channel.	20.00	..	....
10	Do. ..	1981	Koraiyar	20.00	..	....
11	Do. ..	1982	Thirumaniar	20.00	..	....

SECTION 6.

653. *Dalbergia sissoo sissoo.*—Dalbergia sissoo is a light spreading crowned deciduous tree. It comes up very well in the alluvial deposits on the sides of streams and rivers. It is a multi-purpose tree whose leaves can be used as Green manure leaf and a good fodder. The wood is an excellant fire wood. The very hard dark streaed heart wood sideal in carving works. Timber can be used in building cabinet making and furnitures.

Nursery raised container seedlings may be planted in the intervals of Teak plantations and other miscellaneous plantations.

SECTION 7.

654. *Levcaena leucocephala* (Subabul) : It is otherwise called as 'Subabul'. It is an unarmed small tree, spreading readily from self sown seeds. It is a good fodder species. Coppices grow very well in all soils except saline any sandy soils, wherever the soil is ideal, it may be planted.

EXISTING PLANTATIONS.

Serial number.	Name of plantation.	Area in Ha.	Year.	Remarks.
(1)	(2)	(3)	(4)	(5)
1	Coleroon river	10	1982	For fodder esp. 2 x 2 m.
2	Rajamadam	4.80	1982	Esp. 1.5 x 1.5 m.
		14.80		

SECTION 8.

655. *Avenue Planting.*—Tanjore District is abunded by a net work of canals and roads. A list of road avenue plantations raised in Tanjore Division furnished below. The roads proposed for future road avenue planting is also furnished.

The avenue plants planted since 1977 have come up well but for the lapses of protection from cattle in most of the localities.

656. *Planting.*—Two years old fallen seedlings may be planted in 45 CM^3 pits and the seedlings protected by suitable free guards. Old damaged tree guards should be replaced as and when necessary . During the summer facilites for watering may be provided to all plants upto three years including year of planting.

657. *Choice of speices.*—Flowering plants such as Delonix regia, Poinciana elata, Peltophorum ptermocarpum, Cassia fistula and Butea frondosa may be tried near the villages. In other areas srees of usufructural value such as Tamatindus indica may be tried. In such areas where the water it abundant species like Pongamia pinnata may be planted.

Distribution of the area :—

658. *Avenue planting—*

Roads available for planting.

1	Tanjore Range	223.3 Km.
2	Pattukottai	585.9 Km.
3	Mannargudi	1,463.910 Km.
4	Kumbakonam	821.360 Km.
5	Sirkali	934.08 Km.
		4,028.55 Km.

659. *Other regulations.*—Wherever there is possibility for planting more than one row it may be tried.

Depending upon the availability of funds and other facilities the annual target may be fixed by the District Forest Officer.

660. List of Road Avenue Plantations raised in Thanjavur Territorial and Social Forestry Division—

Serial number.	*Year.*	*Name of the Range.*	*Name of Road.*	*Length in Km.*	*Species raised.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	1977	Thanjavur	Ellupatti to Karungulam	5	....	....
2	1977	Kumbakonam	Kumbakonam to Lower Anicut.	15	....	....
3	1977	Sirkali	Sirkali to Mayavaram	5	....	....
4	1978	Thanjavur	Vallam to Vasthath Savadi	5	....	....
5	1978	Kumbakonam	Kumbakonam to Karaikal.	8	....	....
6	1978	Chidambaram	Coleroon to Chidambaram.	5	....	....
7	1978	Sirkali	Sirkali to Poompuhar	5	....	....
8	1978	Mannargudi	Mannargudi to Muthupet.	7	....	....
9	1979	Thanjavur	Vallam to Orathanadu	15	....	....
10	1979	Kumbakonam	Thiruvarur to Thanjavur	5	....	....
11	1979	Chidambaram	Chidambaram to Buvanagiri.	5	....	....
12	1979	Sirkali	Sirkali to Poompuhar	5	....	....
13	1979	Mannargudi	Mannargudi to Thiruthuraipoondi.	5	....	....
14	1980	Do.	Mannargudi to Orathanadu.	5 5	Tamaarind.	....
15	1980	Thanjavur	Vallam to Alakkudi	5	....	....
16	1980	Kumbakonam	Thiruvarur to Thanavur	5	....	....
17	1980	Chidambaram	Buvanagiri to Kurinjpadi		....	....
				110		

Serial number.	Year.	Name of the Range.	Name of Road.	Length in Km.	Species raised.	Remarks.
(1)	(2)	(3)	(4)	(5)	(6)	(7)
18	1980	Sirkal	Sirkali to Thanjavur		....	...
19	1980	Pattukottai	Avanam to Peravurani		...	...
20	1981	Thanjavur	Collector's Bungalow to Vasthasavadi.		...	...
21	1981	Do.	Koviloor to Saliamangalam.	4	....	Raised by Social Forestry Division.
22	1981	Peravurani	Avanam to Keeramangalam.	5	....	Do.
23	1982	Thanjavur	Thanjavur to Vallam	2.5	....	Do.
24	1982	Do.	Thanjavur to Mannargudi	2.5	Coconut	Do.
25	1982	Do.	Budalur-Sengipatti	5	Miscellaneous	Do.
26	1982	Orathanadu	Orathanadu to Mannargudi.	5	Do.	Do.
27	1982	Do.	Pappanadu to Pulavankadu.	5	Coconut	Do.
28	1982	Kumbakonam	Kumbakonam to Thanjavur.	5	....	Do.
29	1982	Do.	Valangaiman to Govindakudi.	5	....	Do.
30	1982	Do.	Valanigaiman to Manaparavai.	5	....	Do.
31	1982	Do.	Kumbakonam to Mayuram.	5	....	Do.
32	1982	Do.	Valapalakkadia to Valangaiman.	5	....	Do.
33	1982	Pattukottai	Tiruchirtrambalam to Avanam.	5	Miscellaneous	Do.
34	1982	Do.	Perungavalanthan road	5	Coconut	Do.
35	1982	Peravurani	Sethubavachatram to Pallathur.	10	Miscellaneous	Do.
36	1982	Do.	Peravurani to Avudaiyarkoil.	5	Coconut	....
				18		

661. List of existing Canal Miscellenoues plantations of Thanjavur Division—

Serial number.	Year.	Name of plantation.	Area in km.	Species.	Remarks.
(1)	(2)	(3)	(4)	(5)	(6)
Kumbakonam Range—					
1	1982	Devarayampettai canal	5.0	Misc & Teak	Sida
2	1982	Kadavanparai	5	Do.	Do.
3	1982	Cauvery canal	6.4	Do.	Do.
4	1982	Manniyar river	6.4	Do.	Do.
5	1982	Kumki Manniyar	5	Do.	....
6	1982	Coleroon River	6	Misc Bamboo	....
7	1982	Do.	5	(Fodder)	Subabul
Thanjavur Range—					
8	1982	Thirupuvanam canal	5Km	Misc	....
9	1989	Kadakadapai Vadavar canal	5Km	Misc	....
10	1982	New Kattalai canal	10 Km	Misc	....
Orathanadu Range—					
11	1982	Thelungakudikadu canal	..	Misc	....
Pattukottai Range—					
12	1982	Alivalam	5Km	Misc	..
13	1982	Pannavayal	5 Km	Mice	....
14	1982	Rajamadam	4.80 ha	(Fodder)	Subabul

662. *Section 9.—Dibbling Palmyrah nuts.*—There are a number of canal banks in this division which are in the vicinity of sea rendering themselves suited for other species. In suchplaces two or more rows of Palmyrah nuts may be dibbled at an espacement of 2m× 2m which will serve as a wind break as well as a soil bind on the canal bank. After maturity it will yield a sizable revenue also.

663. *Section 10.—Planting prosopis juliflora—Analysis of the crop.*—There is a vast stretch of barren land in Talanayar Reserve Forest. The salinity of the soil is not supporting any tree growth in this Reserved Forest. Therefore it is proposed to plant the most popular (*Prosopis juliflora*) which is a small evergreen popular, armed with stout scattered thorns. Though this species adopts various types of soil diesback in damp localities. Therefore it may be planted on ridges and mounds formed so that the salinity and dampness are minimised.

664. *Section 11.—Railway Line Planting—Analysis of the crop.*—There are a large stretch of railway lines extending over 397 Kms. They can best be used for planting tree crop. Southern Railway authorities have their own choice of species to be planted. However, Tectona grandis and Eucalyptus *teretieonis* which grow fast and with their crown density can be tried at places which are suitable for the species.

665. The other species that can be tried are (1) Pongamia pinnata, (2) Azadirachta indica, (3) Tamarindus indica.

In order to break the monotony of the stretch, flowering plants such as Cassia fistula Glyricidia maculata ; Peltopherum Ptero Carpus and cuttings of Pointciana alata can be planted. Flowering plants may be tried bordering the railway stations so as to improve the aesthetic value of the stations.

666. *Division of the area*—There are 20 Km. of railway line planting raised from 1982 as per the list enclosed.

667. There is also 397 Kms. of railway lines as furnished in the list available for future planting.

List of Railway Line Plantation in Thanjavur.

Serial number and name of plantations.	*Year.*	*Area in Km.*	*Remarks.*
(1)	(2)	(3)	(4)
(*a*) *Kumbakonam Range*—			
1 Kumbakonam—Thirunageswaram	1982	5	..
(*b*) *Thanjavur Range*—			
2 Mariamman Koil—Saliamangalam	1982	5	..
(*c*) *Pattukottai Range*—			
3 Pattukottai—Peravurani	1982	5	..
(*d*) *Peravurani Range*—			
4 Peravurani—Merpanikadu	1982	5	..
Total ..		20	

668. *Areas to be planted in Railway line—Thanjavur Division.*—

Serial number and name of railway lines.	Area available in Km. for failure planting.	Remarks.
(1)	(2)	(3)
From—To—		
1 Coleroon—Budalur	95	..
2 Mayiladuthurai—Ayingudi	140	..
3 Nagore—Thanjavur	81	..
4 Mayiladuthurai—Tranquebar	30	..
5 Needamangalam—Mannargudi	5	..
6 Thiruthuraipoondi—Kodiakarai	46	..
Total	397	

669. *Other regulations.*—The planted seedlings should be effectively protected, or the main object of planting will be defected. Wherever there is possibility for watering, plants will be watered during hot and dry seasons. Free guards may be provided to each and every (individual seedlings).

670. Casualities may be replaced repeatedly so as to ensure cent per cent stocking.

671. Two weedings and soil workings may be given to the individual plants for the first two years. The tree guards should be repaired as and when necessary by the plot mazdoors.

672. Local young and energetic persons may be appointed as plot mazdoors.

673. *Section 12—Wild Life.*—A separate management plan has been drawn in detail and incorporated in Appendix No. XXI.

674. *Section 13—Soil Conservation.*—Soil conservation measures are suggested in all regeneration areas where there is danger of erosion in order to conserve soil and moisture to arrest soil erosion and prevent run off. This will involve anti-erosion and reclamatory works such as construction of contour bunds, diversion channels, waste weirs, check dams and gully plugging, etc.

675. The scheme for soil conservation will include two types of measures as indicated below :—

(1) Mapping of land for classification according to slope, nature of soil, terrain and nature of erosion.

(2) Execution of soil and water conservation measures.

The method of laying out the mapping work for the soil conservation is described below.

676. A beny level or dumpy level will be used for recording the levels both vertically and horizantally at an interval of 60 metres after establishing the detum level and those spots are pegs marked on the ground. A contour map is prepared for the locality by interpolation with the help of these levels. The area will be divided into 3 categories based on the slope, i.e.,1 to 2 per cent, 3 per cent to 5 per cent and above 5 per cent. The contour maps prepared will additionally indicate the areas selected for construction of check dams and other control works to drain the excess run off gently. Formation and implementation of various measures to fight soil erosion are described below :—

Alignment, staking and construction of bunds.—

677. Bunding work will be done from the top most point downwards. If due to certain reasons the top portions are not to be afforested and bunded, the top bund should be made sufficiently large so as to intercept the water from above and pass it down safely. It will be better to make it a graded bund with a grade of 2 per cent and divert the water to a safe place.

678. Aligning will be done with an Abney level or Chat tracer or dumpy level and stretches will be set at suitable intervals.

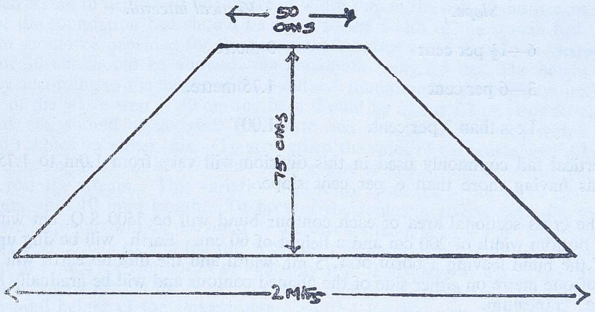
679. A convenient base line is selected so far as possible in the centre of the plot. A jeepable tract can be taken as a base line. Both parallel and perpendicular to this base line levels are recorded by Abney level or Ghat tracer or Dumpy level at intervals of 60 metres and these are peg marked in the plot. From a cairn or a known point the level of the base line at a fixed point is found out. From it is point on the base line levels of all the other points 60 m apart are found out. Then a contour map is prepared with veritical intervals of 1 m and these contours are maked in the field. Contour map is prepared by interpolation. After all the contour are aligned giving an appropriate vertical fall according to variation in slope they should be eased to avoid sharp curves frequent and continuous tunnings. For this a deviation of upto + or − 25 Cms is permissabble in vertical fall. Bunds are constructed along these contours. The width of the bund will be marked on the ground with the staked points, forming the central line of the bund.

Marginal bund will be constructed all along the periphery of the plot to augment the soil conservation works. Borrow pits will be dug up on both sides of the bund. The length of the pit varies according to the slopes. Generally the width will be 1m to 2m and depth to facilitae check measurement. Borrow pits must ran parallel to the bunds and they should be 1.5m away from the toe of the bund, so as to prevent any shipping of the bund if the borrow pit is nearby. Great care is necessary at every stage of bunding like levelling staking formation, providing waste weit, etc., because failure of any bund will result in the failure of the chain of bunds lower down.

Granwiler type of tractor fitted with angle dozer can be used to form bunds which will be faster and comparatively cheaper than manual labour.

680. *Ploughing methods and forming smaller bunds.*—It is necessery to direct all other operations towards maximum conservation of soil and moisture in addition to tour bunding. All ploughing should be done strictly along the contours. While ploughing, it is possible to make small bunds on the contour by running the iractor with a displough assembly set to one extreme side along the contour, the tractor can be made to run with opposite direction at about 1 m distance from the plough line to make small bunds of about 20 cm to 30 cm in height. Wherever the land is sloping uniformly it will be ideal to align the planting lines along the contours.

681. *Bund spacing.*—In laying out the bunds on the ground the spacing generally adopted should be 1 m vertifical drop in 50 m sloping distance. The bunds will be generally 50 cm on the top and 2m at the base with vertifical height of 75 cm. as shown in the sketch.



The 1m vertical interval is only as assumption and put at this interval, contour bunds will be safe. On no account the vertical interval should be more than 1 mt. but it can be less.

682. *Size of bunds.*—To determine the size of the bund the vertical interval, the horizontal interval and the height of the bund have to be calculated. They are determined as described below :—

683. *Vertifical Interval.*—(*a*) For areas with less than 1000 mm rainfall

VI=6+5 × 15

VI=Vertical interval.

(*b*) For areas over 1000 mm rainfall

$$VI=\frac{2+S}{4}\ 60\times S=7.5$$

Where S=Percentage of slope.

684. *Horizontal interval.*—

The horizontal interval is obtained from the formula.

$$HI=\frac{VI}{\text{Percentage of slope.}}$$

HI—Horizontal interval.

VI—Vertical interval.

The height of the bund is calculated by the formula.

$$H\ \frac{LRS}{5}+F$$

H—Height of the bund in can.

L—Horizontal interval.

R—Maximum Rainfall in mm in 24 hours.

S—Percentage of slope.

F—Free board usually 15 cm.

685. *Contour bund.*—Bunding is generally done for slopeless than 10 per cent. The vertical interval between 2 bunds will vary according to the slope. Generally the following vertical intervals are recommended.—

Slope.	*Vertical interval.*
6—1½ per cent	3 metre.
3—6 per cent	1.75 metre.
Less than 3 per cent.	1.00

The vertical fall commonly used in this division will vary from 1.0m to 1.75m since there are no areas having more than 6 per cent slope.

686. The cross sectional area of each contour bund will be 7500 S.Q. cm with a top width of 50 cm ; bottom width of 200 cm and a height of 60 cm. Earth will be dug up from the up-hill side of the bund leaving a borm of 1.75 mt. width and the dug up earth will be spread out to a width of one metre on either side of the aligned contour and will be gradually heaped up to a slope of a trapezium.

The maximum permissible length of each bund is 300 m. If this length is exceeded then lateral bunds at right angles to the contour should be built at least 30 cm. above the contour.

687. Jeepable paths, etc., will be formed along the contours only so that they do not form erosion hazards.

Consolidation of bunds.—The bunds should be consolidated by planting suitable species all along the bunds which are capable of growing fast to come and hold the bund and not browsed by animals. A few species are suggested below but any other special work suitable may also be preferred.

1.	Ipomes bilopa	....
2.	Vitex nigandu	Cuttings 0.5 m long.
3.	Glyricida maculata	Do.
4.	Euphorbia	Do.
5.	A rando doneax	Do.
6.	Jatropha curus	Do.
7.	Amona squamosa	Seedling.
8.	Agave	Bulbils.
9.	Aloc	Do.
10.	Adathoda	Cuttings.
11.	Palmyrah	....
12.	Tephorsia purpulea	Kolinji

The species may be planted either mixed or pure at an interval of 2m during the planting season along with the main plantation preferably earlier if possible to prolong the effectiveness of bunds. The bunds should be inspected after the first heavy rains and weak points and breaches should be repaired immediately.

The bunds of the first year should be maintained during the second year by repairing all breaches.

688. *Prevention of cattle.*—Grazing cattle will damage the bunds and the damage will be more especially before the bunds are consolidated. Hence the area will be closed to grazing.

689. *Diversion channels.*—Diversion channels will be formed (1) to arrest the velocity of water flowing from the Upper slopes of the water shed (2) to drain of the water in such a way as to minimise damage to the loose top soil. A trench of 1.25 m width at the top 0.75 m width at the bottom and 0.75 m depth will be formed on the upper outer periphery of each year's regeneration area to channelise the flow of water and bring its velocity under control to facilitate silt deposition. Water will flow through the diversion channels into natural streams and depressions, which will have waste weirs across them in sunded portions. For every 120 m of contour bund a breach of 0.75 m should be provided as surplus weir to allow the excess water to flow off. Such surplus weirs should be staggered along the slope. The edges and the beds of weirs should be paved with stones.

690. *Waste weirs.*—To allow the escape of the excess water waste weirs should be provided at salient points on the bund. The superstructure of the waste weir should be strengthened by a foundation bed 30 cm in depth and one metre in width dug in the bed of the stream or depression. The length of the foundation bed should be equal to the width of the stream bed. A minimum width of 1.5m should be provided for the first eight hectares and for every subsequent 8 hectares an increase of 30 cm should be allowed, the maximum being 2.5 m. The height of the waste weir may vary according to the height of the bund. A minimum height of 30 cm may be allowed. If the height of the waste weir is 30 cm the base should be about 1.2 m. For 60 cm 2m and for 90 Cm. 2.7 m. etc., should be allowed. The waste weir should be provided with a good packing of stones and rubbles on either side. To strengthen the sides of the waste weir a key is provided on either side linking it up with the bund. The extent of key in will vary with the length of the weir lying across the stream. This variation will range from 0.6 m for weirs upto 3 m length to 1.2 m for weirs upto 10 m m length. To prevent the scouring action due to velocity an apron and one or two steppings will be provided in the down stream side of the superstructure. Each stepping will be of 25 cm. so that the top width of the waste weir will be 50 cm in relation to a bottom width of 1 metre. The apron or spill way will be 1 metre in width and 30 cm in depth. A vent way will be provided in the centre of the waste weir to a length of 50 cm. and to a depth of 15 cm. The total height of the superstructure will be 1 metre and the height of each stepping will be 1/3 m. The spill way should be padded with grass sods. Masonry waste weirs are costly and serve the same purpose as grass waste weir.

The cost of masonry waste weir can be reduced by putting two or more cement tubes in centre of the weir.

Construction of Vegetative Check.]

691. *Dams.*—Vegetative check dams will be formed in gullied areas at intervals of 15 metres apart. The vegetative check dam will consist of Agave transplants of Aloe-bulbuls spaced at intervals of 1½ to 2 metres. The rows will be staggered. Seeds of Cassia auriculata and Dodonea viscosa will be shown and cuttings of Poincinna elata, Jatropha curcus and seedlings of Murraya Koenigli will also be raised. In addition brushwood will be heaped on the upper side. Wherever available stones and boulders of 25 cm. Cube and above in size will be heaped in the lower side of the check dams in order to stabilise them. Masonry checkdams should be built only if they are absolutely necessary and wherever the oridinary reclamatory works are considered in effective. Check spill way of flume with grass-side spill way dams, drop inlet dams and other soil saving structures will be built wherever necessary.

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Section 14—Roads and Buildings.

(*A*) *Roads*:

692. There are no forest roads in this division. A proper approach road from the main road to the rest house at Point Calimere has been constructed and gravelled. Another suitable road has been formed and constructed to the second rest house at Point Calimere.

(*B*) *Buildings*:

693. *Residential buildings.*—The existing buildings will be maintained in a state of good repairs. Clearance of the surroundings of the buildings, white washing, painting the doors and windows and other repairs should be carried out regularly. A list of existing buildings are furnished below :—

694. There are no quarters for most of staff in this division with the result they stay outisde the place or work and are forced to pay high rent for their accommodation. Hence construction of quarters for all categories of staff is prescribed during this plan period near the plotes of work, to enable the staff to discharge their duties more efficiently and effectively. The construction of new buildings should be taken up in a phased programme during the plan period depending upon the availability of funds and site, etc. Procurement of size is a difficult problems in this division. Hence it is suggested that necessary and suitable site should be procured sufficiently early and fenced.

695. *Non-Residential buildings.*—The rest house at Poin-Calimere needs improvements such as new roofing, floaring and plastering the walls. Water supply in the rest house which is not adequate and satisfactory at present should be improved to attract tourists. A list of non-residential buildings constructed is furnished below :—

696. The following residential buildings were constructed and particulars of cost year of construction, etc., are furnished below :—

Serial number and name of the building.	*Locality.*	*Year of construction.*	*Cost of construction.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)
			RS.	
1 One combined quarters for forest guard and watcher for Muthupet beat staff.	Thuraikadu.	1961-62	7,078.82	
2 One combined quarters for forest guard and watcher for chatram beat staff.	Thuraikadu	1963-64	7,100.60	
3 One combined quarters for Forest guard and watcher.	Keeramangalam	1963-64 and 1964-65	8,701.64	Transferred. to TAFCORN Pudukkottai.

Constructed by the State Wildlife Unit.

1 Forester's quarters	Kodiakadu.	1969-70	11,487.00	All electrified.
2 Combined quaters for forest guard watcher.	Do.	1969-70	16,035.25	Do.
3 Chouki gate building ..	Agasthaimpalli.	1969-70	5,117.05	Do.

Non-Residential Buildings.

697. The following new buildings were constructed and particulars of cost, year of construction, etc., are furnished below :—

Paragraph

Serial number and name of the buildings.	*Locality.*	*Year of construction.*	*Cost of construction.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)
			RS.	
1 One semi permanent shed at Thenperambur for mulbery rearing shed.	Thenperambur.	1978-79	11,647.00	....
2 Point Calimere Rest house	Point Calimere	1910	N.A.	....
3 Poonarai Illam Rest house	Point Calimere.	1974	N.A.	Transferred from P.W.D.
4 Forest Guards quarter	Kolidakadu.	..	....	....
5 Research scholars quarters 2 combined quarters.	Point Calimere.	1981	68,006.24	....

698. One inspection shed will all basic necessities at Pudukottai is very necessary since it is very difficult to secure accommodation there and the work spots are concentrated round about Pudukkottai. One permanent check-post shed should be constructed at the entrance of Kodiakadu Reserve Forest on the way of Point Calimere to prevent poaching.

699. *Wells.*—There is a well near the staff quarters at Kodiakadu in a neglected condition. All measures should be taken to maintain it in a good condition. Two wells were constructed in the game sanctuary during 1981-82 at a cost of Rs. 5,000 and also 2 check dams were constructed at Point Calimere Game sanctuary at a cost of Rs. 7,800 (Cost of construction of per check-dam is Rs. 2,600).

A list of wells and tanks are furnished below—in paragraph 404 of Part I.

Section 15—Boundaries ond Reservation Proceeding.

700. *Demarcation.*—Almost all the reserved Forests (Except Thuraikadu) and reserve lands have been demarcated on the ground by erection of stone pillars. Except in Thalainayar reserve forests in all the other blocks stone pillars have not been numbered in accordance with the settlement maps. The stone pillars should be serially numbered in all the blocks within the period of 3 years some of the boundary pillars are missing or have fallen due to erosion which should be replaced by erecting new stone pillars in their position. Some of the intermediate points require stone pillars which should be done wherever necessary. Thuraikadu reserve forests should be demarcated on the ground.

701. *Survey and settlement.*—In G.O. Ms. No. 646, Forests and Fisheries, dated 20th July 1976 the Government have empowered Tahsildars to function as settlement officers with a view to expediting issue of notification under forest Act. The work is being carried out and the forest Department staff are co-operating with the Forest settlement Officer. The progress in Thanjavur Division as follows :—

Number of block notified under section 16-3 (821.95 ha.)

Number of block for which section 16 notification is to finalised 13 (1,201.91 ha.).

Sectioi. 16—Machinery

702. There is a tractor in good condition two jeeps and an Omni bus in use of this division. The Jeep MDE 4278 transferred from Trichi is not worthy which may be disposed off.

A ilst of vehicles is furnished below :

703. Statement showing the machineries in the Thanjavur Division.

Serial No.	*Registration No. of the vehicle.*	*Make of the vehicle and horse power.*	*Date of purchase.*	*Price paid.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)	(6)
1	TNO 2418	Tractor ..	17—11—1973	41,091·02	Good condition
2	TMZ 2883	Mahendra and Mahendra 15.63 HP.	13—9—1973	25,000.00	Do.
3	TNO 6853	Jeep 18.22 HP. ..	23—7—1980	62,768.96	Do.
4	TNZ 1172	LMV 1982 Omni Bus Diesel.	21—4—1982	80,000	Do.
5	MDE 4178	Jeep 15.83 HP.	Transferred from Assistant Conservator of Forests, Tiruchi.	Not known	condemned not in use.

Boats :

704. There is a sail boat at Muthupet for Perambulating the Muthupet mangrove forests. In order to enable the departmental inspecting officials and protecting staff to more easily and speedily, mechanised boats may be acquired.

705. There are many fibre glass boats seized by the Customs Department and left to the vagaries of nature at Point Calimere.Government may be addressed and a boat may be got allotted exclusively for the Forest Department.

Section 17—Control Records and Maps.

706. The control records and maps which are to be maintained in the District Forest Office have been dealt with under the various working circles. The posting and maintenance of control records and maps is matter of vital and prime importance which should receive the personal attention of the District Forest Officer. Simple forms have been prescribed to control the implementation of the prescriptions under the working plan. All control forms will be in foolscape size in loose leaf files.

707. *Control book.*—This register will show all operations actually carried out in connection with the exploitation in each felling series as per prescriptions of the working plan as suggested but are carried out.

708. *Record of works.*—All works carried out under the prescriptions or recommendations of the working Plan as well as such measures as are neither prescribed for suggested but are carried out will be recorded in this forms.

709. *Register of deviation.*—This is a consolidated register of deviation showing every case of deviation from the prescription of the working plan, the need for deviation and the authoritiy by whom it was sanctioned.

710. *Control maps.*—The control map will show on 1 cm=scale the areas proposed for working every year, the areas actually, worked areas regenerated annually, if any with the name of the species planted or sown and with the year of original planting.

711. *Control journals.*—The control journals will give a detailed account of the management of the division. The object of this journal is to secure the remarks on all aspects of administration especially on the extent to which the object of the working plan have been realised and the extent to which the methods prescribed have been found suitable, successful and economical and could be implemented a record important and interesting observations and comments arising out of the

actual experience of the District Forest Officer in divisional administration and such information as is not available in the control forms and record of works. The District Forest Officer is expected to records all his suggestions modifications and improvements in the methods of working laid down in the working plan. If it is maintained properly, it should be of great help when the plan is taken up for revision. Control journal shall be maintained separately for each working circle. The form prescribed in Appendix 'S' of the Madras Forest Department code should be adopted and suitably expanded when necessary. In accordance with section 59 (3) of the code a summary of annual Revenue and Expenditure in such a form as to facilidate comparision with the financial forestcast of the working plan, is to be entered in the control journal.

712. The control journal is a technical record and must be written up personally by the District Forest Officer at the end of each year and also before handing over charge. A copy of the entries made during the year should be submitted to the Conservator of Forests soon after the end of each financial year along with copy of the deviation statement, the control forms and maps.

713. *Plantation and nursery journal and ledger.*—A plar tation journal will be maintained for each plantations shcwing it s location, area, skecth of the plantation on a scale 1 cm. 0.0792 km. the nature of previous growth, the revenue obtained by clearing of the growth, the details and cost of the plantations and details of works carried out.

714. Similarly a nursery journal will be maintained for each year's nursery showing its location number and size of beds species sown, seed origin, date of sowing nursery technique adopted watering regime cost of maintenance, etc.

715. For every plantation and nursery raised ledgers shoulu be maintained in detail showing the details of each operations carried out, their date and cost, etc.

716. Both the plantation and nursery journals and ledgers will be personally maintained by the Range Officer. Copies of these journals will be maintained at the District Forest Officer.

717. The following control forms are prescribed under each working circle (*Vide* Appendix No.) for details of each form.

A. *Timber plantation working circle.*

1. Control of regeneration operations.
2. Control of cultural operations.
3. Plantations and nursery journal and ledger, etc.
4. Control map journal.
5. Control map.

B. *Fuel working circle.*

1. Control of fellings.
2. Control of regeneration operation.
3. Plantation journal and ledger.
4. Control journal.
5. Cortrol map.

C. *Bamboo working circle.*

1. Control of felling.
2. Control of plantation work,
3. Plantation journal.
4. Control journal.
5. Control map.

D. *Minor forest produce working circle.*

1. Control book.
2. Record of yield.
3. Record of revenue.
4. Control of regeneration operations.
5. Plantation journal and ledger.
6. Control journal.
7. Control map.

E. *Miscellaneous regulations.*

1. Control book for grazing.
2. Record of works—Miscellaneous regeneration.
3. Control journal.
4. Control map (Showing area closen to grazing, open to grazing, etc.).

F. *Common to all working circles.*

1. Register of deviations.
2. Record of works.
3. Financial statement.

Fire maps :

718. Separate fire maps should be maintained for each range showing all cart tracks foot paths and boundaries fire tracked every year as per plan prescriptions and also areas burnt by fire each year with the date, etc.

719. Sample forms for the control records and co: trol journals for all the working circles and given in Appendix Nos. XX and XXI.

Control maps :

720. The control maps will be maintained as d etailed below:
4"=1 mile (1 Cm.=1.60 Km.) for posting in R.F. maps and for Avenue plantation posting in the scale 1" = 1 mile(1 Cm.=0.64 Km.).

721. *A Timber plantation working circle.*—Details of area planted up along the canal and river banks, year of planting and the name of the main species raised both in the case of compact and avenue plantations will be shown on separate control maps of 1Cm. = ,64 Km. C. 1" = 1 mile) km. scale.

Bamboo fuel working circle casuarna working circle, and minor forest produce working circle :

722. Details of felled fuel coupes or regeneration areas such as the year of working area leased out and area actually worked, etc., will be shown on the control maps of year of regeneration area planted with species, etc., wil laiso be indicated in the map.

CHAPTER VIII.

ESTABLISHMENT AND LABOUR.

Section 1—Establishment.

723. The existing strength of staff of this division has been furnished in Chapter IV part I. At present the Range Officer Vedaranyam has no clerical assistance. Consequent on the merging of Vedaranyam Wild Life Unit With Vedaranyam Range, the Ranger has to spend much of his time in the office routine. If clerical assistance is given, the valuable time of the Ranger can be diverted to the field inspections and efficient and effective control over other activities can be ensured.

Section 2—Jurisdictional Changes.

724. The Tamil Nadu Forest Plantation Corporation was formed as per G.O. Ms. No. 267, Forest and Fisheries Department, dated 3rd April 1974 communicated in Chief Conservator of Forests's Ref. No. 4342/73 J2, dated 29th April 1974. A large number of revenue yielding plantations have been leased out to the Corporation. Particular of plantations handed over to Tamil Nadu Forest Plantation Corporation is furnished in the Appendix.

Miscellaneous and Eucalyptus Hybrid plantations raised in this division were handed over, as per the list furnished in the appendix to the Social Forestry Division, Pudukkottai as per G.O. Ms. No. 1307, Forest and Fisheries Department, dated 9th November 1981 communicated in Chief Conservator of Forest's No. 122047/81/73, dated 17th November 1983.

Section—3. Labour.

725. Generally there is plenty of labour availability during the off season when the ploughing, puddling, transplanting, harvest, etc., are over is possible for forestry operation. But most of time forestry operations synchronises with the Agricultural peak seasons.

726. The wages paid as per Forest Schedule Rates are comparatively less than what is paid by local agriculturists. The wages provided in the present Forest Schedule Rates for Thanjavur District is as follows :—

	Rs.
A-Class Mazdoor	8.00
B-Class Mazdoor	6.00
C-Class Mazdoor	5.00

CHAPTER IX.

Financial Forecast and Cost of the Working Plan.

Section—Financial Forecast.

727. (1) The probable revenue and expenditure in respect of each working circle during the period of the Working plan as estimated and an obstract of the forecast are furnished in the following statement :

(2) Since most of the Teak plantations have been devasted by thec yclone on 11th November 1971 which crossed the east coast near Nagappattinam, and most of the revenue yielding plantations have been transferred to both TAFCORN and Extension Forestry Division Pudukkottai no appreciable amount of revenue can be expected. Only by way of thinning the younger Teak plantations and felling Casuarina plantaions some revenue can be obtained.

(3) It is only from the fuel working Circle a substantial amount of revenue can be realised.

(4) Due to heavy investments in timber plantation working circle which is worth investing, in future it may yield considerable revenue.

(5) There may be tangible variation between the forecast and the actuals due to fluctuations and increase in standard of living, increase in wages, cost of material etc. The yield may also vary which is beyond human control, and coverned by the vagaries, of nature, posts and diseases.

728. *The following are the financial forecast of revenue and Expenditure for the Thanjavur Forest Division :—*

A. Revenue.

Serial number.	*Particulars.*	*Amount.*	*Remarks.*
(1)	(2)	(3)	(4)
		RS.	
I. Timber plantation working Circle —			
1	Sale of 30,000 poles at Rs. 5 per pole per year for 10 years 3,00,000 poles.	15,00,000	
2	By sale of 12 tonnes of firewood (i.e. top ends and side branches, etc.) per year for 10 years at Rs. 150 per tonne.	18,000	
		15,18,000	
II. Casuarina Working Circle —			
1	By sale of 25,000 tonnes of Casuarina firewood and poles at Rs. 400 per tonne for 10 years.	1,00,00000	
2	By sale of pruned side branches of Casuarina twigs 2,500 tonnes at Rs. 120 per tonne at the rate of 250 tonnes per year.	3,00,000	
		1,03,00,000	

B. Expenditure.

		RS.
III. Fuel Working Circle.—		
1	By sale of 1,40,000 tonnes of firewood at Rs. 150 per tonne over a period 10 years.	2,10,00,000
	Total ..	2,10,00,000
IV Bamboo Working Circle.—		
1	Sale of Bamboo extracted from Bamboo plantations 2,00,000 Numbers a period of 10 years.	6,00,000
2	Sale of bamboo thorns and twigs 10,000 head leads at Rs. 5 per head load over 10 years.	50,000
	Total ..	6,50,000
V. Minor Forest produce Working Circle:—		
1	By sale of fishing lease at Rs. 22,000 per year for 10 years based on the average of previous years.	2,20,000
2	By sale of coconut usufructs at Rs. 100 per year for 10 years.	1,000
3	By Sale of Elandai unit at Rs. 20,000 per year for 10 years.	20,000
4	By sale of other items at Rs. 500 per year for 10 years.	5,000
	Total ..	2,46,000
VI. Miscellaneous Regulations.—		
1	*Grazings*—By sale of grazing permits at Rs. per year for 10 years.	42,000
2	*Cashew usufructs*—By sale of cashew nuts 15,000 Kgs. over a period of 10 years at Rs. 8 per Kg.	1,20,000
3	*E. H. Plantation*—Sale of 1200 tonnes of E.H. wood at Rs. 250 per tonne over 10 years.	30,00,000
		31,62,000
VII. Other items.—		
1	By realisation of compounding fees revenue realised by way of entrance free to sanctuary, etc. at 8400 per annum for 10 years.	1,00,000
2	Revenue appropriationed to this Division from compounding fees collected by Assistant Conservator of Forests, Protection squad at Rs. 1000 per year for 10 years.	10,000
		1,10,000

B. Expenditure.

Serial number and particulars.	*Amount.*	*Remarks.*
(1)	(2)	(3)
	RS.	
I. Timber Plantation Working Circle.—		
1 Raising and maintenance of Teak and other timber species at Rs. 7.80 per ha. (200 seedlings) for 40,00,000 seedlings over 10 years.	1,56,00,000	
2 Expenditure on thinning in avenue and compact particulars.	3,00,000	..
Total ..	1,59,00,000	
II. Casuarina working circle.—		
1 Formation and maintenance of 250 ha of Casuarina plantations at Rs. 25 ha, per year at 4,670 per ha. for 10 years including the cost of nursery.	11,67,500	—
2 Expenditure on prunning the Casuarina plantations	25,000	..
Total ..	11,92,500	
III. Fuel Working circle.—		
Raising fuel plantations and maintaining them at 2,770 per na. over 3,500 ha. over a period of 10 years.	96,95,000	..
Total ..	96,95,000	
IV. Bamboo Working Circle.—		
1 Raising Bamboo and maintaining them over 167 Kms. at Rs. 1,760 per Km. Over a period of 10 years.	2,94,000	—
2 Expenses on extraction of Bamboo at Rs. 1 per bamboo for 20,000 Bamboos over 10 years.	2,00,000	—
Total ..	4,94,000	
V. Minor Forest Produce Working Circle.—		
Nil.		
VI. Miscellaneous Regulations.—		
1 Maintenance and intensive cultural operations including spraying pesticides and fertiliser application and cost of pesticides and fertiliser at Rs. 600 per ha. per annum for 31 ha. over 10 years.	1,86,000	—
2 Raising cost of 53 ha. of E.H. plantation at Rs. 1,500 per ha. over a period 10 years.	79,500	—
3 Raising Road Avenue plantations over 4,000 Kms. at Rs. 3,100 per Km. over a period of 10 years.	1,24,00,000	..
4 Raising railway like planting at 3,100 per Km. for 400 Kms over 10 years	12,40,000	—
5 (*a*) Maintenance of old existing building ..	40,000	..
(*b*) Maintenance of old wells	200	—

Serial number. (1)	*Particulars.* (2)	*Amount.* (3)	*Remarks.* (4)
		RS.	
Machinery.—			
(*a*)	Purchase of mechinnisied new boat for the department including maintenance for 10 years.	1,20,000	..
(*b*)	Maintenance of Tractor at Rs. 3,000 per annum for 10 years.	30,000	...
(*c*)	Maintenance of Motor vehicles for years at Rs. 1,50,000 per annum per vehicle for 3 vehicles.	4,50,000	..
(*d*)	Contingencies for other expenses Rs. 2,000 per annum.	20,000	...
	Total ..	1,45,29,700	

729. The following are the detailed particulars for the cost of establishment of Thanjavur Division for 10 years :—

I.	Salaries—		
1	Pay	47,75,000.00	..
2	Dearness Allowance	11,26,000.00	..
3	Medical charges	5,000.00	..
4	Other allowances	2,20,000.00	..
II.	Travel expenses	6,30,000.00	..
III.	Office expenses	5,44,000.00	..
IV.	Motor vehicles.		
	Maintenance	1,50,000.00	..
	Cost of fuel	2,50,000.00	..
5	Other charges	50,000.00	..
	Total ..	77,50,000.00	

730. The following is an abstract statement of Revenue and expenditure anticipated for the period of plan.—

	Serial number and number and name of the working circle. (1)	*Revenue.* (2)	*Expenditure.* (3)	*Deficit.* (—) (4)	*Surplus.* (+) (5)
1	Timber plantation working circle	15,18,000	4,59,00,000	1,43,82,000	..
2	II Casuarina working circle ..	1,03,00,000	11,92,500	..	91,07,500
3	III Fuel working circle ...	2,10,00,000	96,95,000	...	1,13,05,000
4	IV Bamboo working circle ...	6,50,000	4,94,000	..	1,56,000
5	V Minor Forest produce working circle.	2,46,000	Nil.	...	2,46,000
6	VI Miscellaneous regulations ..	31,62,000	1,45,29,700	1,13,67,700	...
7	Other items	11,000	..	...	1,10,000
8	Establishment	..	77,50,000	77,50,000	...
		3,69,86,000	4,95,61,200	3,34,99,700	2,09,24,500

Deficit for 10 years ..	1,25,200	1,25,75,200	
Average deficit per year ..	12,57,520		

SECTION 2—COST OF THE WORKING PLAN.

731. The expenditure incurred on the preparation of this working plan excluding the share of direction charges relating to the Conservator of Forests, Working Plan Circle and his establishment during the period of preparation of this plan is furnished below :—

Cost of the Working Plan.

Serial number. (1)	*Particulars.* (2)	*Expenditure.* (3) RS. P.
1	Pay of officers	24,813.15
2	Pay of establishment (Temporary and permanent)	2,33,801.65
3	Dearness allowance	95,963.60
4	Field work	..
5	Other compensatory allowance	27,877.60
6	Travelling allowance and fixed travelling allowance	61,821.80
7	Miscellaneous (Maintenance of Motor vehicles)	20,160.93
8	Contingencies	30,896.35
		4,95,335.08

Cost of working plan per ha. .. .. $\frac{4,95,335.08}{17,822.76}$ = Rs. 27.79

(Areas of canal bank plantations have not been included)

The revision of working plan for the Thanjavur Forest Division was commenced on 2nd January 1981 and completed on 31st October 1983.

CHAPTER X

SUMMARY OF PRESCRIPTIONS.

FOR PART II.

CHAPTER I BASIS OF PROPOSALS.

732. *General objects of Management are.—*

1. To exploit the resources of forests in respect of Minor Forest produce, cashew Casuarina small timber on sound silvicultural principles 4 22.

2. To increase the commercial value of forests by artificial regeneration of economic species 422.

3. To afforest the coastal areas with casuarina to serve as shelter belts wind breakage and for fire wood—422.

4. To afforest the river and canal banks with teak and other timber species to supply timber—422.

5. To conserve the forests in the interest of climate, water supply soil conservation and agriculture—422.

6. To provide grazing facilities to in cattles—422.

7. To supply raw-materials to the forest based industries—422.

8. To protect the forests against damage leaf biotic factors—422.

9. To increase the forest resources by planting in Tank beds, porombokes and road margins—422.

Method of treatment.—The methods of treatment proposed in each working circle and the agency of exploitation is briefly outlined—casuarina will be exploited on area basis, through the agency of contractors under clearfelling system. The exploitation of firewood from mangrove forests had been stoped in order to preserve the mangrove areas as nature reserves. M.F.P.s. will be exploited through contractoral agency—423.

Period of working Plan.—This working plan will be in force for a period of 10 years from 1st July 1983 to 30th June 1993—426.

CHAPTER II—TIMBER PLANTATION WORKING CIRCLE.

General Constitution.—The working circle includes all Teak plantations raised including the other Timber species and the areas proposed to be planted in future. 427—428.

Division of the areas.—The total area of the timber plantation Working circle will be about 29,694.67 ha. Out of which 15,236.77 ha. have already been planted with Teak and other timber species and an area of 14,458.50 ha. will be planted in future. 429—431.

Five planting series are formed as follows:—

		Proposed future			
		Fresh.		*Gap.*	
1. Tanjore series	..	31,500	seedlings.	2,11,000	seedlings.
2. Kumbakonam series	...	3,91,500	Do.	2,29,000	Do.
3. Sirkali	..	3,72,400	Do.	2,12,500	Do.
4. Mannargudi	..	3,12,500	Do.	2,00,000	Do.
5. Pattukkottai	..	4,50,000	Do.	1,85,000	Do.
		18,41,400		10,37,500	

Analysis of the crop is including.

Method of Treatment.—The silvicultural system to be adopted is clearing the growth of the banks of river canal followed by artificial regeneration—433.

Choice of species.—Teaks (Tectona grandis) will be the main species and the reasons therefore discussed—434.

Rotation.—A tentative rotation of 60 years is prescribed and reasons therefor discussed—435.

Espacement.—Espacement prescribed is 2x2m past—436.

Regeneration.—Introduction of Casuarina only in suitable soil prescribed—423.

Grazing—will be regulated by issue of permits. There will be a chapter on Miscellaneous regulations for matters not covered by in different working circles 423.

Working circles.—Five working circles has been constituted their names, areas and anticipated out turn are given below—424.

Serial number.	*Name of the Working Circle.*	*Area in ha.*	*Out come per annum.*
(1)	(2)	(3)	(4)
1.	Timber Plantation W.C. ...	15,236.17 ha. +28,78,900 sailing.	Supply and provide 30,000 (poles) Thinned materials per year.
2.	Casuarina W.C.	759.04 ha.	Market about 2,500 tonnes of firewood and 250 tonnes of pruned side branches for fuel wood per annum.
•	Fuel working circle	5,690.57 ha.	Market about 14,000 tonnes of firewood/annum.
4.	Bamboo W.C.	258 ha. +166.5 km.	Market about 20,000 bamboos/annum.
5.	Minor Forest Produce W.C. ..	Entire Tanjore Forest Division.	Market about Rs. 22,000 worth fish per annum.
			Rs. 2,500 with other M.F.P. produce annum.
6.	Miscellaneous regulations ...	Do.	Sale of grazing permits at Rs. 4,200 per annum.
	(1) Grazing		
	(2) Cashew usufructs	71 ha.	Exploot and market about 1,500 Kg. Cashewnut per year.
	(3) Eucalyptus plantations ..	76 ha. —43.75KM.	Market about 120 tonnes of wood per annum.

Cashew working circle and Mangrove working circle of the 425 current plan by Thiru M. S. Karunakaran, I.F.S., are discontinued and the reasons are discussed.

Details of avenue and compact block are furnished to raise teak plantations—438.

Quality class.—Teak plantations of Tanjore Division correspond to All India Quality Class IV—430—440.

Collection of seeds.—Arrangements will be made with the Geneticist, Coimbatore for the supply of Teak and Other seeds. Weight of seeds storage and germination and plant percentage are given—441.

Nursery.—Details of Nursery Technique are given—442—444.

Sowing.—Details of sowing of different species and their pretreatment, etc. are outline. weeding in the Nursery beds and pulling out wolves advocated—445.

Preparation of stumps.—Details of Technique of preparation of stumps and their size are described—446-447.

Regulation of regeneration operation preparation of planting sites—448.

(a) Survey and Demarcation—448.

(b) Clearing the are : This will be done before May– 449.

(c) Aligaing staking.—This will be done in June—450.

(d) Planting.—Planting technique is described—451—452.

(e) Watering.—Watering technique to the seeding till second year except on rainy days is described.—453.

(f) Replacement of casualities.—Replacement of Casualities prescribed in the first and in second year for different species.—454.

(g) Drainage.—Draining off water during rainy season to prevent damping off is given.–455

Subsidiary silvicultural operation—Discussed and prescribed—456—459.

Thinning.—Thinning rules and program are discussed and prescribed—460—466.

Marking rules for thinning.—Marking rules for thinning are laid down.
The control of records to be maintained are indicated– 467.
Control of records:

CHAPTER—III.

Fuel Working Circle.

General Constitution and objects of Management.

This working circle covers all the existing Farm Forestry plantations and areas proposed to be planted under social forestry scheme. The object of the management is to increase the forest resources outside the Forest limits with a view to increase the supply of small timber, Firewood, Fodder, Green manure leaf, etc., The objects of this working circle will be broadly classified are given—472.

Division of the area.—The area of the working circle is 5,690.57 ha. out of which 2,147.59 ha. are already under fuel species. The remaining area of 3,452.98 ha. will be planted during the period of the plan. Particulars showing the areas and location is given—473—477.

Analysis of the crop.—The fuel forests are described.—478.

Method of Treatment.—The silvicultural system followed in this working circle will be simple coppice system, wherever the coppicing is not adequate, clear felling with artificial regeneration will be followed. Rotation of 10 years will be followed.—479—480.

Choice of species.—The species are preferred according to the soil condition—481.

Espacement.—Present espacement of 3 x 3m is prescribed.

Method of executing felling.—The plantations will be exploited through the agency of contractors. A statement of plantations to be worked during each year of the plan period is given—481.

Regulation of Regeneration operation Nursery.—Container seedling of fuel species raised. The nurseries will be Located as faras possible nor the planting site. The seedlings will be well nursed as shifting grading will be done—486.

Preparation of planting site.—The area selected for regeneration will be survey; demarcated and aligned at an espacement of 3m x 3m. The—488.

Planting.—After felling a food rain fall the seedling will be planted without giving roo shocks and distributed at one seeding per pit.

Casuality replacement.—Casualities will be replased and when noticed in the plantations.

Soil working.—One weeding and soil working to a radius of 1m around the plant. During the first year, and one soil working to a radius of 0.50 cm. will be done during second year—491.

Protection.—The area will be closed for 5 year including year of formation. Plot mazdoor will be to prevent the damage due to biotic—492.

Control.—The control maps, records, form to be maintained are indicated—

CHAPTER IV—CASUARINA WORKING CIRCLE.

General conditions.—This working circle comprises of all the existing casuarina plantations and fresh areas proposed for planting with Casuarina during the plan period.—494

Character of vegetation.—Casuarina is largely confined to sandy places near the sea cost and Padugais of cauvery—495.

Division of the area.—The total area of the working circle is 759.04 hectares one of which 505.11 hectares are already under Casuarina and 253.93 hectares of fresh area will be planted with Casuarina. Statement showing the distribution of area are provided.—497.

Felling series.—The working circle is divided into two felling series viz., Coleroon series 476.04 and Coastal series 338 hectares. Statement of area and location of blocks are provided—499

Analysis of the crop.—Cauarina plantations vary in growth and stocking from one another not only in different plantation but also in the same plantation of the same age due to soil factor flood damage is considerable in the Padugais of Cauvery and coleroon rivers.—500

Method of treatment.—The silvicultural system prescribed is clear felling followed by artificial regeneration of Casuarina. Casuarina equisetifolia will be raised as pure crop—501.

Rotation.—The rotation is fixed at 6 years—502

Espacement.—Espacement of 1mx1m is prescribed—503.

Size of annual plantations.—Annual planting programme furnished—504.

Method of executing felling.—Plantation at the rotation age will be sold for extraction contractors; The lease period will be 6 months from December to May—506.

Survey and demarcation—Each year plantation will from the annual coupe. Clearfelling coupe will be surveyed and demarcated on the ground in September one year prior to felling. Coupes will be divided into convenient bits or strips. Coupes will be sold in public auction—507.

Regulation of felling.—Felling rules prescribed—508.

Tabular statement of felling.—The Tabular statement of plantations to be felled furnished—509.

Regulation of preparatory works and planting.—Nursery and planting techniques discussed and prescribed—510–513.

Replacement of Casualities.—Casualities will be replaced in the year of formation—522.

Weeding and soil working.—Weeding and soil working will be done once in five year in October to a diameter of 1.5 m around the plant. Saucering will be done periodically—523–524.

Second year maintenance.—Replacement of Casualities, watering the backward plants are suggested—524.

Pruning.—Pruning is prescribed in the fourth year. Rules regarding pruning are described ih detail. Removal of dead and wind fallen trees in public action is suggested every year—527.

Ploughing to improve the area sowing of Kolingi to increase the fertility of the area are suggested in areas after first rotation—529.

Statement showing the Casuarina plantation to be proud is furnished—528.

Other regulations—

(*a*) *Grazing.*—Closure to grazing for the first 5 years including the year of formation is prescribed—530.

(*b*) *Plantation boards.*—Plantation boards at the salient corners depicting the year of formation area and name of the block—531.

(*c*) *Protection.*—The existing staff should more vigilance in protection of Casuarina plantations against illicit fellings and removal, etc., Appointment of plot watcher for the protection of the plot will be continued—533.

(*d*) *Pest and discease.*—Protective measures against pest and discease are suggested—534.

(*e*) *Statistics.*—The Range Office will furnish the quantity of firewood and poles extracted by the contractor cost of plantation, etc., which will help to assess the profit and loss.—536.

Control.—Control forms to be maintained and posted every year are indicated.

CHAPTER V.

Bamboo Working Circle.

General Constitution.—Areas included in the Bamboo working circle are furnished—537.

Analysis of the crop.—Bamboo arundinaea is prescribed—538.

Division of the area.—Total area of the working circle is 258 ha. plus 166.50 K.M. out of which 250 ha. are already under bamboo plantation, and 156.50 KM. of fresh areas will be planted. Statement showing the distribution of the areas provided—539.

Method of treatments.—Silvicultural systems prescribed—543.

Regulation of working.—Working will be regulated by number of bamboos—

Sale unit.—Each range will be considered as sale unit—545.

Felling cycle.—Felling cycle of three years has been prescribed—546.

Regulation of yield.—Yield will be regulated by number of bamboos.—547.

Method of executing the fellings.—Felling rules for bamboos are prescribed and the steps to be taken to enforce them are indicated. Definite collection depots are allotted to each plantation and from the collection depots the bamboos should be transported to the sale depot under the cover of proper permits—548 to 551.

Regulation of artificial regeneration operations.—Bamboos have been raised in the failed patches of 1974 teak plantations at the rate of 500 plants both in 1974 Pillaivaikkal teak avenue plantation 1974 Regunatha Cauvery teak avenue plantation of Thanjavur Range. Subsequently during 1981 bamboo has been raised on Tank beds—552 to 554.

Nursery.—Nursery and Planting Technique discussed and prescribed—555.

Control.—Control forms to be maintained and posted every year are indicated— 567

CHAPTER VI.

Minor Forest Produce Working Circle.

General constitution.—This working circle covers all the reserves (except Kodaikadu R.Fs.) unreserves and other areas under the control of the Forest Department—568.

Analysis of the crop.—The forests covered by this working circle are mainly scrub type and the minor forest produce accurs only in small quantities—569.

Kind of produce.—The different items of Minor Forest Produce occurring in the tract are mentioned in the list—570—571.

Division of the area.—All Reserved Forests and Reserve Lands recept Kodaiakadu R.F., is in the total area of this working circle. Statement showing the distribution of the area are provided —568.

Method of treatment.—Minor Forest Produce will be exploited through the agency of contractors except in the case of finishing which will be allotted to co-operative societies of the locality—572.

Period of lease.—The lease period will be one year from 1st July to 30th June of the succeeding year. Sale will be conducted before the end of May—574.

Other items of M.F.P..—Other items of M.F.P. will be sold as one chit for the entire division.

Lease period and conditions of lease described—575.

Fishing lease.—Various fishing lease to be given on negotiation are described in detail—576.

Konnai and Avaram barks.—This will be sold once in 5 years as a separate unit for the entire division—577.

Elandai.—Elandai in Maharajapuram will be sold as a separate unit with a lease period of one year commencing from July and June of the succeeding year—578.

Other regulations.—Discretion of the District Forest Officer to split up or clube together lease units and to add items or delete as required—579.

Accounts.—Contractors should render accounts regarding collection and removal of forest produce monthly—580.

Control.—Control forms to be maintained and posted every year are indicated—581.

CHAPTER VII.

Miscellaneous Regulations.

Section I—Grazing.

Grazing is allowed in all Reserved forests, reserved lands of the division except in areas that are closed grazing—582.

The object of Management of grazing are—

1. To provide adequate pasture for cattle.

2. To limit the grazing incidence.

3. To improve the grazing facilities—583

Permanent and Temporary closures indicated—584.

Regulation of grazing.—Grazing will be regulated by issue of permits and permits issued through departmentally—587.

Grazing rates.—Grazing rates for different animals indicated. Grazing incidence—Grazing incidence and revenue realised are indicated—589.

Grazing year.—Grazing year is from 1st July to 30th June of the following year—591.

Grazing Unit.—The entire division is one grazing unit—592.

Removal of fodder grass.—Cutting and removal of fodder grass will be permitted in accordance with the orders of the Government from time to time—593.

Section 2—Mangroves.

General Constitution.—This working circle comprises mangrove forests of Muthupet Reserved Forest, Maravakadu Thalanagar, etc.—595.

Character of vegetation.—The mangrove forests confine along the sea coast. They exhibit distinct zonation and special adoptation such as vivipary stilt roots and Penvnatophdres, etc. Improvement of water facilities and Miscellaneous regulations are indicated—596.

Division of the area.—The total area of the mangrove is furnished—600

Method of Treatment.—The method of Treatment depends on the species present, stocking stage of succession and coppicing power of the Component species. Grazing is prohibited. Further the working of Mangrove have been suspended from 1975 for conservation.

Section 3— Cashew Plantation.

General constitution and character of Vegetation.—The working circle comprises of all existing cashew plantations. All the parts of the trees are useful—603.

Division of the area.—Total area of this working circle is 71 ha. Major plantation raised since 1958 have been handed over to Tamil Nadu Forest Plantation corporation on lease from 1st August 1974. The list of areas handed over is given—610.

Analysis of the crop.—The crop is not uniform. There is 94 per cent stock at present in Avanam R.F. but the yield is not satisfactory. Like that the cashew in 1977 Singipatti is poor stocking and the yield upto very poor—612.

Method of Treatment and the regulation of preparatory works and planting cultural operation and other regulations are clearly indicated—614 to 640.

Section 4—Eucalyptus teriticornis.

Analysis of the crop .—It is an exotic from Australia. It is a most successful species at low elevation. Excellent coppicer, fast growing and used as pulp and firewood—644.

Espacement .—2 m x 2m closer spacing is adopted—645.

Planting.—Seedlings of six months old is planted in 30Cm 3 pits., during monsoon season—646

Retention :—Rotation of 8 years will be followed—647.

Other regulations.—Weeding and soil working during first year will be done. Also casuality replacement. During second year also weeding and soil working will be given—648.

List of existing plantations and area proposed for planting are indicated—649 and 650.

Section 5—Salmalia malabarica.

Salmalia is good where alluvial soil rich in sand occurs. In Thanjavur division, it was planted in between teak and Bamboo, where the soil is ideal for this species. Statement of existing plantation are given—652.

Section 6—Dalbergin sissoo.

Dalbergia sissoo is light spreading crowned deciduous tree. It is a multipurpose tree, leaves can be used as green manure leaf and a food fodder. This will be raised on the bank of canal—653.

Section 7—Acacia leucoephala.

Subabul comes very well in all soils except saline and sand soils, Good fodder species. It is an unarmed small tree, spreading readily from self sown seeds. List of existing plantations are given.

Section 8—Avenue planting.

Thanjavur district is abunded by net work of canals and roads. Avenue plants planted since 1977. List of plantations existed and proposed area are indicated. Two year old seedlings will be planted in 45Cm3 pits. The choice of species are indicated.

Section 9—Palmyrah.

Dibbling of Palmyrah nuts along the boundary of Reserved Forests and Reserve lands at 2 m interval is suggested.—662.

Section 10—Prosophis juliflora.

This species adopts various typing of soil. In Thallinayar R.F., there is a vast stretch of barran land. The salinity of the soil is not supporting any tree growth in this R.F. Therefore it may be planted on ridges and rounds formed—663.

Section 11—Railway line Planting.

Analysis of the crop.—There are large stretch of Railway lines extending over 397 kms. They can be best issued for planting teak and Eucalyptus teriticornis, due to their characteristic crown density. Other species can be tried are Pongamia pinnata, Aza dirachta indica and Tamarindus indica—664

Division of the area.—Total area is 417 Kms out of which 20 Km is already under plantation. The remaining 397 Km. available for future planting.—666.

Other regulations.—The planted seedlings should be effectively protected. Casualities may be replaced repeatedly two weeding and soil working may be given during first two years—669.

Section—12 *Wild Life.*

A separate management plan has been drawn in detail and incorporated.—673.

Section 13—*Soil Conservation.*

Soil conservation measures are suggested in all regeneration areas where there is danger of erosion.—674.

Measure proposed.—1. Bunding along contour, 2. Formation of diversion channels, construction of waste weirs (3) Construction of Vegetative check dams and gully plugging, Mapping of land for classification of methcd of alignment, of contour bund. use of of contour bund use of tractor to form bunds, bund spacing size of bunds, verticial interval are described in detail 675—690, 686

Consolidation of bunds by planting suitable species, such as Agave, Jatropha Aloc and Kolingi, etc.—687.

Reason for prevention of cattle is indicated—688.

Provision of diversion channels to drain of excess water is given—689.

Details of construction of waste weirs are provided—690.

Construction of vegetative check dams in gullied area at 15 m. are suggested. They will consist of transplants of Agave, sowing of cassia anriculata, cuttings of Jatropha, curcus, etc.—691.

Section 14—*Roads and buildings.*

(A) *Roads.*—There are no forest roads in this division.—692.

(B) *Building.*—The existing buildings will be maintained in a state of good repairs.

Construction of various residential, and non-residential buildings for the next 10 years in a phased programme is given—693.

(C) *Wells.*—Maintenance of existing wells in good condition—List of existing well are given—699.

Section 15—*Boundaries and Reservation Proceedings.*

Demarcation of reserve forests by serially numbering in stone pillars in accordance with the settlement map is given—700.

Settlement.—Prompt action should between to expedite matters relating to the notification under Forest Act—701.

Section 16—*Machinery.*

Purchase of Jeeps, Tractors and Omni Bus and Boats are outlined. List of vehicles available in Thanjavur Forest Division is given—702.

Section 17—Control records and maps.

Control.—Details regarding the maintenance of control book, record of works, register of deviation, control maps and control journals are given. Simple forms have been prescribed to control each major operation prescribed. Each important cultural operations will have its own simple control form. Each working circle will have record of works for minor prescriptions and a journal for felling series or plantations. Details regarding the maintenance of control book, record of works, register of deviation and control journals for each working circle are given. Control map to be maintained under each working circle showing the details of fuel coupes worked or plantations raised against those prescribed is given.—706 to 722.

Plantation and nursery journals and ledgers.—Details of maintenance of plantation and nursery journals and ledgers for artificial regeneration operations are furnished.

Control forms.—Control forms to be maintained for each working circle is listed out in details.

Fire maps.—Maintenance of separate fire maps for each range showing details of cart tracks, pot paths, boundaries, etc., is prescribed.

Control maps :—The control maps to be maintained under each working circle are furnished.

CHAPTER VIII

Establishment and Labour.

Establishment :—Posting of a clerical assistant to Vedaranyam range recommended. For other range and division the present strength of staff is adequate—723.

Jurisdictional charges.—A large number of revenue yielding plantations have been leased out to the Tamil Nadu Forest Plantation Corporation as per Chief Conservator of Forest No. 4342/73 J2, dated 29th April 1974. Also miscellaneous and eucalyptus plantations raised in this division were handed over to Social Forestry division, Pudukkottai as per Chief Conservator's No. 122047/81/73, dated 17th November 1983. The list is furnished in the appendix—724.

Labour.—Generally labour is not difficult to obtain except on agricultural season.—725.

CHAPTER IX.

Financial forecast and cost of the working plan.

Financial forecast.—The details of the revenue and expenditure anticipated under each 783—787 working circle and miscellaneous items, etc., during the plan period are furnished. An abstract statement of revenue and expenditure forecast for each working circle and miscellaneous items is also provided. The gross revenue anticipated for the entire period of the plan is Rs. 3,69,36,000 and the total expenditure is expected to be Rs. 4,95,61,200. The estimated average annual deficit will be about Rs. 12,57,520. Reasons for the deficit is given.

Cost of the working plan.—The total cost of the preparation of the working **plan is Rs. 4,95,335.08.**

APPENDIX I-A

TEMPERATURE.

METEROLOGICAL NORMALS.

At 1. Nagapattinam : *Based on observations from 1931 to 1960.*

At 1. Nagapattinam.

Month	*Mean of daily.* Max in O C.	Mini in C.	*Monthly total.* Rainfall in mm.	*Extremes temperature.* Highest in O C.	Lowest C.
(1)	(2)	(3)	(4)	(5)	(6)
January	27.7	22.8	57.2	31.7	16.1
February	28.7	23.5	25.2	35.6	15.6
March	30.3	25.1	21.5	40.0	16.7
April	32.5	26.8	55.1	41.7	20.0
May	35.5	27.4	56.0	42.8	20.6
June	36.6	27.0	28.8	41.7	20.6
July	35.3	26.0	62.0	40.6	20.6
August	34.4	26.0	62.0	40.6	20.6
September	33.7	25.07	61.8	37.8	20.6
October	31.4	25.0	224.0	357.2	20.6
November	28.9	23.9	458.2	35.0	16.7
December	27.7	22.8	239.0	33.9	16.7

TEMPERATURE.

METEROLOGICAL NORMALS.

At 2. *Adirampattinam.* *At 3. Vedaranryam.*

Month.	*Mean of daily.* Max. O C.	Min. O C.	Monthly total rainfall.	Mean max. O C.	*Monthly total* Rainfall.	mm.
(i)	(2)	(3)	(4)	(5)	(6)	(7)
January	29.6	20.9	51.0	29.4	21.9	63.0
February	31.2	21.6	9.5	30.8	22.1	16.3
March	32.5	23.8	36.5	32.9	24.3	33.8
April	33.3	26.8	61.3	34.4	26.0	29.0
May	34.1	27.0	42.0	35.0	26.6	21.6
June	33.8	26.3	39.5	34.3	26.1	3.43
July	33.3	25.8	61.4	34.0	25.5	49.6
August	33.3	25.2	137.1	33.7	24.8	127.5
September	33.1	25.1	93.5	33.5	24.4	151.3
October	31.7	24.3	292.0	32.1	23.5	303.9
November	29.8	23.1	224.3	30.2	22.5	399.2
December	28.9	21.9	214.8	29.0	22.4	405.8

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APPENDIX I-B. HUMIDITY 1961—1970.

METEROLOGICAL NORMALS (BASED ON OBSERVATIONS FROM 1961—1970.)

NOTE :—*Nagapattinam Station : Based only on 1931—1960.*

Month.	1. *Nagapattinam.*		2. *Adirampattinam.*		3. *Vedaranyam.*	
	0830 *Ist per cent.*	1730 *Ist per cent.*	0830 *Ist per cent.*	1730 *Ist per cent.*	0830 *Ist per cent.*	1730 *Ist per cent.*
(1)	(2)	(3)	(4)	(5)	(6)	(7)
January	78	74	85	67	79	75
February	77	72	83	61	77	73
March	74	71	79	63	74	71
April	73	73	73	65	73	71
May	69	69	69	71	73	73
June	61	61	65	74	71	74
July	65	63	66	72	71	76
August	70	67	70	73	73	73
September	71	69	72	74	72	72
October	79	75	82	78	81	77
November	82	77	85	78	84	71
December	**81**	76	85	74	84	70

MONTHLY RAINFALL STATEMENT FROM 1970 TO 1982 AT 1. THANJAVUR.

Serial number.	*Year.*	*January.*		*February.*		*March.*		*April.*	
		Number of days.	*Rainfall.*	*Number of days.*	*Rainfall.*	*Number of days.*	*Rainfall.*	*Number of days.*	*Rainfall.*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1	1970..	..	22.6	..	14.7	..	..	..	34.00
2	1971..		2.8	..	5.0	..	..	..	32.00
3	1972..	..	..	..	..	..	..	..	..
4	1973..	..	..	..	..	..	..	..	..
5	1974..	..	..	..	18.3	2	27.4	1	2.2
6	1975..	..	4.2	..	..	4	27.4	..	2.2
7	1976.. .. .	..	..	..	1.6	..	..	4	10.7
8	1977.. ..	..	..	2	11.0	1	9.3	2	7.1
9	1978.. .. .	..	..	..	..	..	..	..	..
10	1979. ..	..	..	..	..	..	42.8	..	..
11	1980.. ..	..	2.8	..	..	..	2.9	..	..
12	1981. ..	..	..	..	..	..	..	1	2.4
13	1982.. .	.	..	..	..	..	..	1	2.4
		2	324.4	5	80.6	9	323.1	11	107.9
		0.2	2.49	0.5	6.2	0.9	24.7	1.1	8.5

At 1. THANJAVUR

Serial number.	Year.	May. Number of days.	May. Rainfall.	June. Number of days.	June. Rainfall.	July. Number of days.	July. Rainfall.	August. Number of days.	August. Rainfall.
(1)	(2)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
1	1970..	..	138.2	..	1.4	..	32.8	..	
2	1971..	..	98.6	..	77.6	..	104.6	..	91.8
3	1972..	5	156.0	..	1.0	..	48.0	..	95.0
4	1973..	6	54.1	2	41.0	4	91.8	10	49.0
5	1974..	7	86.2	..	99.5	8	61.4	3	62.9
6	1975..	2	3.4	5	113.6	6	80.7	7	103.2
7	1976..	8	104.6	1	0.2	4	81.4	9	211.2
8	1977..	2	13.8	1	10.0	7	225.0	Nil.	..
9	1978..	2	12.8	2	24.9	4	40.4	5	65.8
10	1979..	6	98.8	1	5.9	9	208.8	..	..
11	1980..	..	..	3	15.2	2	40.2	2	86.00
12	1981..	38	886.4	22	389.4	56	1200.5	50	1,16.68
13	1982..	38	68.18	2.2	29.95	56	92.35	5.0	89.75

Serial number.	Year.	September. Number of days.	September. Rainfall.	October. Number of days.	October. Rainfall.	November. Number of days.	November. Rainfall.	December. Number of days.	December. Rainfall.
(1)	(2)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)
1	1970..	..	7.3	..	171.1	..	201.7	..	139.1
2	1971..	..	69.00	..	127.2	..	302.4	..	23.7
3	1972..	..	167.6	..	132.0	..	122.0	..	196.0
4	1973..	..	185.5	11	169.7	8	75.0	9	157.1
5	1974..	11	115.5	7	88.4	3	5.0	3	88.3
6	1975..	8	163.8	11	125.0	14	260.0	8	135.6
7	1976..	6	53.5	7	173.0	18	154.1	12	131.01
8	1977..			21	345.6	18	363.6	3	11.6
9	1978..	3	11.4	10	153.2	..	..	16	237.9
	.. ..	..	..	..	..	..	..	..	..
10	1979.. ..	20	273.3	..	..	..	..	..	..
11	1980.. ..	6	47.4	14	171.2	11	87.6	5	58.9
12	1981.. ..	79	1,325.6	14	291.8	16	236.5	11	199.0
13	1982.. ..	79	101.79	7	158.4	11	258	4	31
		..	..	98	2,106.6	99	2,066.2	71	1,408.5
		..	..	98	165.06..	99	158.94	71	108.35

At 2. THIRUVAIYARU

Serial number.	Year.	January.		February.		March.		April.	
		Number of days.	Rain fall.	Number of days	Rain fall.	Number of days.	Rain fall.	Number of days	Rain fall.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1	1970..	..	5.5	..	..	..	..	..	53 00
2	1971..	..	6.5	..	31.0	..	146.5	..	17.00
3	1972..	..	..	..	..	..	..	..	..
4	1973..	..	..	..	..	..	..	..	..
5	1974..	..	..	2	11.0	..	..	..	..
6	1975..	..	11.00	..	..	3.0	68.3	..	..
7	1976..	..	..	..	..	1	32.	2.2	..
8	1977..	..	..	2	43.4	1	2.8	27.6	..
9	1978..	..	..	..	..	..	..	9.0	..
10	1979	..	..	..	..	1	46.0	..	..
11	1979	..	..	..	..	..	44.0	..	..
12	1981	..	24	..	..	1	14.0	..	..
13	1982.. ..	..	..	..	..	..	..	1	1.9
14	.. .. ..	..	3	25.4	4.0	85.4	7	280 3	8
		0.3	1.95	0.4	6.57	..	7	21 6	11.82

Serial number.	Year.	May.		June.		July.		August.	
		Number of days.	Rainfall.	Number of days.	Rainfall.	Number of days.	Rainfall.	Number of days.	Rainfall.
(1)	(2)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
1	1970.. .. .	..	202.0	..	112.0	..	..	..	300.0
2	1971.. . ..	..	78.8	..	123.0	..	103.0	..	225.0
3	1972.. . ..	..	163.0	..	..	..	73.0	..	114.0
4	1973..	..	..	..	..	..	..	..	..
5	1974..	1	14.0	5	183.0	3	22.0	..	42.0
6	1975..	3	44.0	1	2.0	6	51.0	..	226.4
7	1976..	2	10.5	3	88.2	10	139.8	..	186.4
8	1977..	5	59.2	5	43.9	3	34.0	..	52.2
9	1978	5.	85.8	..	..	2	101.0	..	1.20
10	1979..	..	..	..	2	..	143.0	..	174.8
11	1979..	1	2.0	..	..	..	117.2	..	..
12	1981.. . ..	5.	170.0	1	2.3	7	60.7	..	..
13	1982..	..	829.7	17	611.4	34	844.6	33	1,415.4
14	.. .. ..	22.	63.82	1.7	47.03	3.4	64.98	3.3	108.88

AT 2. THIRUVAIYARU—*cont.*

Serial number.	Year.	September.		October.		November.		December.	
		Number of days.	*Rainfall.*	*Number of days.*	*Rainfall.*	*Number of days.*	*Rainfall.*	*Number of days.*	*Rainfall.*
(1)	(2)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)
1	1970	..	5.0	..	147.0	..	229.0	..	135.0
2	1971	..	59.4	..	134.0	..	392.4	..	27·0
3	1972	..	82.0	..	184.0	..	125.0	..	295.6
4	1973	..	..	..	..	..	..	..	..
5	1974	7	289.0	6	99.0	2	12.0	2	73.0
6	1975	10	115.0	9	102.8	12	153.5	5	166.2
7	1976	8	154.7	6	140.6	17	210.0	7	73.6
8	1977	3	56.6	17	198.2	17	332.2	2	5.1
9	1978	4	64.0	13.	273.0	..	..	17	242.9
10	1979	..	..	..	..	..	..	..	..
11	1979	14	181.4	7	185.0	3	37.0	4	20.1
12	1981	..	..	12	331.0	15	251.2	8	109.2
13	1982	57	1,124.1	5	84.6	11	277.8	3	23.2
14		5.7	86.47	75	188.00	77	2,020.1	48	1,171.5
		..	..	75	144.62	77	155.39	48	90.1

AT 3. VALLAM.

Serial number.	Year.	January.		February.		March.		April	
		Number of days.	*Rain fall.*	*Number of days.*	*Rain fall.*	*Number of days.*	*Rain fall.*	*Number of days.*	*Rain fall.*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1	1970	..	..	..	..	..	63	..	8.0
2	1971	..	..	..	..	..	..	..	..
3	1972	..	..	..	..	..	..	..	..
4	1973	..	..	..	..	..	..	..	..
5	1974	..	..	1	4.4	2	35.4	2	25.4
6	1975	2	10.2	..	..	2	48.4	..	..
7	1976	..	..	1	0.6	..	..	3	29.0
8	1977	..	..	2	33.2	1	17.2	2	6.0
9	1978	..	..	..	..	..	..	..	..
10	1979	..	..	..	..	1	56.2	..	..
11	1980	..	..	..	..	..	..	1	19.0
12	1981	..	..	..	..	..	..	..	..
13		2	10.2	4	382	6	223.2	8	882
14		0.2	0.78	0.4	2.94	0.6	17.17	0.8	6.78

3, VALLAM—*cont.*

Serial number.	Year.			May.		June.		July.		August.	
				Number of days.	Rain fall.	Number of days.	Rain fall.	Number of days.	Rain fall.	Number of days.	Rain falls.
(1)	(2)			(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
1	1970	..	..	..	80.2	..	..	..	..	..	..
2	1971	..	..	..	94.4	..	..	..	..	..	..
3	1972	..	..	..	7.0	..	18.2	..	90.8	13.8	..
4	1973	..	..	1	7.0	..	..	..	158.0	56.3	8
5	1974	..	..	5	44.00	6	97.1	4	40.2	18.6	5
6	1975	..	..	2	43.4	..	..	8	122.2	273.4	11
7	1976	..	..	2	21.8	5	85.6	4	72	163.4	11
9	1977	..	..	5	76.3	..	..	3	58.2	2	8
9	1978	..	..	1	10.0	..	..	3	13.4	2	5.3
10	1979	..	..	2	37.1	2	97.4	3	53.4	4	247.4
11	1980	..	..	1	42.0	3	17.0	2	51.2	4	74.0
12	1981	..	..	6	15 .8	1	7.0	7	137.3	..	14
13		..	..	..	..	..	2.7	3	9.4	3	28.3
				25	621.7	18	325.0	41	1,070.5	4.8	1329.3
				2.5	47.82	18	325.0	4.1	82.35	4.8	102.35

Serial number.	Year.			September.		October.		November.		December.	
				Number of days.	Rain fall.	Number of days.	Rain fall.	Number of days.	Rain fall.	Number of days.	Rain-fall.
(1)	(2)			(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)
1	1970	..	..	..	..	..	..	..	..	..	..
2	1971	..	..	—	—	..	148.6	..	159.4	..	292.6
3	1972	..	..	—	216.0	..	265.2	..	84 4	..	330.0
4	1973	..	..	..	182.6	..	..	9	69.0	7	137.9
5	1974	..	..	..	119.0	9	101.5	1	2.8	3	72.2
6	1975	..	..	—	200.1	10	141.0	11	170.2	6	107.6
7	1976	..	..	..	187.8	8	121.8	13	366.6	8	97.8
8	1977	..	..	..	57.1	16	230.1	15	398 3	3	13.5
9	1978	..	..	..	68.8	12	117.8	..	..	1.2	234.0
10	1979	..	..	..	..	..	..	..	..	..	..
11	1980	..	..	..	34.0	5	181.0	9	100.0	5	54.0
12	198[illegible]		.	..	241.4	12	281.4	12	192.4	10	118.8
13		..	..	..	120.4	7	138.4	10	193.0	3	32.3
				..	1658.7	79	171.75	80	1737.1	57	1486.2
14		..	..	—	127.5	7.9	132.88	8.0	133.62	5.7	114.22

At 4. Thirukattupalli.

Serial number.	Year.	January. Number of days.	January. Rain fall.	February. Number of days.	February. Rain fall.	March. Number of days.	March. Rain fall.	April. Number of days.	April. Rain fall.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1	1970	31.6	..	..	4.2	..	4.2	..	5.6
2	1971	..	14.1	..	..	..	67.8	..	9.7
3	1972	..	..	..	..	..	..	..	..
4	1973	..	..	..	..	..	..	..	..
5	1974	..	1.2	1	9.2	..	..	..	..
6	1975	1	2.1	..	..	2	30.4	..	..
7	1976	..	..	..	..	1	1.3	2	5.8
8	1977	..	2	..	46.0	2	10.1	5	50.8
9	1978	..	..	..	3.4	..	..	..	..
10	1979	..	..	..	..	1	16.4	2	11.4
11	1980	1	..	..	..	..	..	2	11.4
12	1981	..	..	..	..	..	..	..	33.2
13	1982	..	..	..	..	..	..	..	..
		3	52.6	4	62.8	6	130.1	11	120.1
		0.3	4.05	0.4	4.83	0.6	1.1	11	9.24

Serial number.	Year.	May. Number of days.	May. Rain fall.	June. Number of days.	June. Rain fall.	July. Number of days.	July. Rain fall.	August. Number of days.	August. Rain fall.
(1)	(2)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
1	1970	..	126.2	..	23.6	..	99.3	..	92.3
2	1971	..	109.8	..	..	..	40.6	..	179.8
3	1972	..	172.2	..	23.6	..	9.2	..	27.0
4	1973	3	49.6	3	27.1	4	92.0	4	66.6
5	1974	6	80.4	3	49.2	5	34.9	3	17.4
6	1975	4	43.6	..	..	8	33.0	7	172.4
7	1976	1	6.2	5	120.8	8	71.4	9	110.0
8	1977	6	114.4	4	48.2	3	38.6	6	123.3
9	1978	1	6.4	..	..	2	35.0	3	43.4
10	1979	1	14.2	2	7.8	..	100.6	4	43.6
11	1980	1	30.6	2	7.8	..	..	1	2.8
12	1981	6	116.6	..	1.0	4	64.4	..	..
13	1982	2	24.0	..	..	3	17.4	4	55.28
		31	889.2	20	312.3	42	636.4	40	933.9
		3.1	68.4	2.0	24.02	4.2	49.95	4.0	7.84

At 4. Thirukattuppalli—cont.

Serial number.	Year.	September. Number of days.	September. Rain fall.	October. Number of days.	October. Rain fall.	November. Number of days.	November. Rain fall.	December. Number of days.	December. Rain fall.
(1)	(2)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)
1	1970	..	89.7	..	145.4	..	288.3	..	23.8
2	1971	..	86.5	..	112.1	..	65.0	..	235.8
3	1972	..	151.2	..	233.0	..	17.4	..	237.4
4	1973	10	246.8	9	135.2	6	90.7	8	121.0
5	1974	11	159.0	6	134.3	1	6.2	2	39.8
6	1975	10	65.4	3	157.3	10	137.3	5	73.4
7	1976	9	124.2	6	69.4	15	161.6	10	44.0
8	1977	5	67.6	22	351.0	18	351.2	3	17.4
9	1978	4	173.0	11	90.6	..	..	17	185.1
10	1979	..	..	..	..	..	..	..	..
11	1980	2	11.2	5	148.8	10	73.4	4	18.2
12	1981	5	132.4	11	311.0	12	198.6	9	76.6
13	1982	8	62.2	8	112.4	12	209.0	4	20.4
		75	136.92	81	200.05	84	1659.5	62	1092.3
		7.5	105.32	8.1	153.88	8.4	127.65	6.2	84.02

At 5. Grand Anaicut.

Serial number and year.		January. Number of days.	January. Rainfall.	February. Number of days.	February. Rainfall.	March. Number of days.	March. Rainfall.	April. Number of days.	April. Rainfall.
(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	1970	..	15.8	..	6.0	..	..	..	56.6
2	1971	..	3.0	..	14.0	..	..	89.6	24.0
3	1972	..	..	..	..	..	..	..	..
4	1973	..	..	..	..	..	..	..	..
5	1974	..	..	1	9.0	..	..	1.0	1.6
6	1975	..	..	1	15.0	3.0	15	3	63.4
7	1976	..	..	2	28.2	1.8	4	4	30.2
8	1977	..	..	..	15.2	..	..	8.6	..
9	1978	..	..	1	..	..	..	2	0.8
10	1979	..	..	..	..	..	..	1	32.8
11	1980	1	2.0	..	..	..	..	..	..
12	1981	1	..	..	..	..	..	..	..
		0.1	1.6	0.4	5.58	0.5	1.2	1.2	14.63

At 5. Grand anicut—cont.

Serial number and year.	May Number of days.	May Rainfall.	June Number of days.	June Rainfall.	July Number of days.	July Rainfall.	August Number of days.	August Rainfall.
	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
1 1970	—	62.4	—	58.8	..	154.4	—	159.1
2 1971	..	96.0	..	..	..	41.8	..	189.0
3 1972	..	251.6	..	31.3	8	15.2	..	29.8
4 1973	4	129.4	2	52.0	1	14.0	3	45.0
5 1974	8	166.8	2	..	6	74.2	7	104.8
6..1975	3	33.2	9	37.4	5	50.2	9	1,421.1
7 1976	5	64.4	4	38.2	2	61.0	6	117.4
8 1977	4	57.0	..	..	4	88.0	5	49.0
9 1978	1	2.6	3	50.8	3	78.4	5	41.4
10 1979	1	121.0	..	..	7	94.4	..	..
11 1980	4	27.2	..	318.5	40	827.6	43	924.6
12 1981	4.2	83.0	2.1	24.5	4.0	63.66	4.3	71.12

Serial number and year.	September Number of days.	September Rainfall.	October Number of days.	October Rainfall.	November Number of days.	November Rainfall.	December Number of days.	December Rainfall.
	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)
1 1970	..	52.6	..	131.8	..	220.4	..	12.6
2 1971	..	150.6	..	148.2	..	61.2	..	181.2
3 1972	..	167.6	..	239.3	..	18.2	..	214.2
4 1973	11	192.8	12	201.4	9	69.2	7	130.5
5 1974	9	197.8	5	123.0	2	8.2	2	27.0
6 1975	8	90.8	11	113.5	11	92.5	5	52.8
7 1976	..	83.4	6	85.3	17	129.6	5	41.8
8 1977	4	65.0	17	293.8	15	283.6	2	21.2
9 1978	..	..	13	99.6	..	..	13	167.5
10 1979	..	230.6	—	—	—	..	—	..
11 1980	58	1,521.8	7	130.5	10	116.2	3	13.8
12 1981	5.8	117.06	15	340.0	9	120.6	8	70.6
	..	..	10	94.4	12	206.4	4	28
	..	..	96	1,930.8	85	1.426 1	49	971.4
	—	—	9.6	148.52	8.5	107.7	4.9	74.72

At 6. *Papanasam*.

Serial number and year.	*January*		*February*		*March*		*April*	
	Number of days.	*Rainfall.*	*Number of days.*	*Rainfall.*	*Number of days.*	*Rainfall.*	*Number of days.*	*Rainfall.*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1 1970	..	8.8	..	36.0	..	39.2	..	110.0
2 1971	..	..	..	..	..	..	..	110.0
3 1972	..	..	..	..	..	..	..	..
4 1973	..	..	..	..	..	..	..	..
5 1974	..	..	2	23.0	[1.25	..	3	16.0
6 1975	..	10.6	..	..	4.76	..	18	8.0
7 1976	..	..	..	..	..	..	1	14.8
8 1977	..	..	..	19.6	2.71	..	6	11.0
10 1979	..	..	..	..	..	..	..	..
11 1980	..	8.0	..	..	..	..	..	..
12 1982	..	..	..	..	..	..	..	..
		27.4	4	78.6	7	212.0	31	213.3
	0.5	2.11	4	6.05	0.7	16.31	18.72	..

Serial number and year.	*May*		*June*		*July*		*August*	
	Number of days.	*Rainfall.*	*Number of days.*	*Rainfall.*	*Number of days.*	*Rainfall.*	*Number of days.*	*Rainfall.*
	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
1 1970	..	21.6	..	70.0	..	102.0	..	190.6
2 1971	..	249.4	..	15.0	..	55.1	..	149.4
3 1972	..	34.1	..	14.1	..	29.0	..	240.1
4 1973	3	34.1	3	[34.14	4	75.1	6	66.9
5 1974	3	86.4	4	[90.8	3	32.4	5	48.0
6 1975	3	46.4	..	..	12	133.2	9	90.8
7 1976	1	26.0	4	87.9	7	53.0	10	206.8
8 1977	2	11.0	3	14.0	2	24.0	8	157.2
10 1979	2	18.0	..	11	11	45.9	8	88.0
11 1980	1	[16.0	3	77.0	3	88.0	..	129.0
12 1982	3	[49.0	..	..	..	194.0	Nil.	13
	19	593.0	18	413.8	..	851.5	2,896.8	..

6. *Papanasam*—cont.

Serial number and year.	September. Number of days.	September. Rainfall.	October. Number of days.	October. Rainfall.	November Number of days.	November Rainfall.	December. Number of days.	December. Rainfall.
	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)
1 1970	..	68.4	..	104.6	..	480.0	..	50.2
2 1971	..	44.0	..	223.5	..	125.1	..	357.82
3 1972	..	283.1	..	167.0	..	126.6	..	293.2
4 1973	8	66.9	11	200.6	11	131.8	5	160.8
5 1974	8	233.0	8	142.4	3	11.2	4	114.7
6 1975	8	129.0	13	232.4	13	230.6	7	128.0
7 1976	5	86.6	6	105.0	18	318.2	11	117.3
8 1977	4	72.0	20	289.2	17	685.2	14	34.6
10 1979	10	91.2	13	132.6	..	..	18	326.1
11 1980	..	..	..	..	..	..	..	..
12 1981	..	238.0	5	130.0	3	75.0	3	60.0
13 1982	62	1,441.2	8	233.0	14	329.0	5	75.0
	..	..	7	15.0	9	314.0	2	25.0
	.	..	91	2,112.3	88	2,826.5	58	1,695.0
	..	..	91	162.48	8.8	217.43	5.8	130.4

7. *Valangaiman.*

Serial number.	Year.	January. Number of days.	January. Rain fall.	February Number of days.	February Rain fall.	March Number of days.	March Rain fall.	April Number of days.	April Rain fall.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1	1970	..	77.4	..	44.0	..	.	..	24.0
2	1971	..	40.2	..	10.4	..	106.2	..	91.5
3	1972	..	..	..	..	..	..	..	..
4	1973	..	..	..	..	..	..	..	..
5	1974	..	..	1	14.0	..	..	..	..
6	1975	..	82.2	..	..	..	..	..	..
7	1976	..	24.2	1	5·0	..	..	..	..
8	1977	..	..	1	19.4	..	..	4	14.2
9	1978	..	..	..	..	..	..	..	..
10	1979	..	..	..	..	..	..	..	..
11	1980	..	..	..	..	..	..	..	..
12	1981	1	5.0	..	..	..	..	..	12.4
13	1982	..	..	..	..	..	..	1	25.0
		3	133.2	3	92.8	3	195.6	13	306.5
		0.3	10.25	0 3	7.14	0.3	23.58	1.3	23.58

7. *Valangaiman*—cont.

Serial number.	Year.			May: Number of days.	May: Rain fall.	June: Number of days.	June: Rain fall.	July: Number of days.	July: Rain fall.	August: Number days.	August: Rain fall.
(1)		(2)		(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
1	1970	..	..	..	99.6	..	66.0	54.6	..	..	195.6
2	1971	..	..	..	83.0	..	22.5	73.0	..	..	129.0
3	1972	..	..	..	104.0	..	14.6	28.0	..	..	..
4	1973	..	..	3	55.6	..	70.0	143.2	..	..	[61.0
5	1974	..	..	4	55.8	..	76.0	9.0	6		126.0
6	1975	..	..	3	58.6	3	13.3	77.6	9	..	190.6
7	1976	..	..	1	2.6	3	51.6	93.0	9	..	120.2
8	1977	..	..	5	91.1	3	14.5	7.8	10	..	120.2
9	1978	..	..	..	..	..	..	34.6	14	..	23.4
10	1979	..	..	..	6.80	..	12.2	113.2	3	..	80.0
11	1980	..	..	3	11.8	..	..	3	17.5	..	23.2
12	1981	..	..	3	54.0	2	12.0	10	228.2	..	..
13	1982	..	..	2	40.0	3	12.0	3	54.0	..	107.0
				26	584.9	25	345.6	40	927.8	..	1,150.2
				2.6	44.99	2·5	26.58	4.9	5,3	..	88.48

7. *Valangaiman*—cont.

Serial number.	Year.			September: Number of days.	September: Rain fall.	October: Number of days.	October: Rain fall.	November: Number of days.	November: Rain fall.	December: Number of days.	December: Rain fall.
(1)		(2)		(19)	(20)	(2)1	(22)	(23)	(24)	(25)	(26)
1	1970		..	..	67.2	..	102.0	..	505.6	..	30.4
2	1971	..	..	..	44.6	..	257·6	..	165.2	..	381.7
3	1972	..	..	..	231.4	..	276.7	..	152.0	..	286.4
	1973	..	..	..	94.0	12	175.0	9	140.2	8	192.0
5	1974	..	..	..	242.4	5	110.2	4	10.2	4	124.8
6	1975	..	..	..	49.2	11	308.6	7	146.6	5	180.7
7	1976	..	..	..	70.2	3	116.0	14	230.3	10	225.0
8	1977	..	..	..	130.8	18	271.0	17	676.6	4	37.5
9	1978	..	..	..	127.8	11	141.2	..	..	7	280.0
10	1979	..	..	..	..	..	..	..	..	4	..
11	1980	..	..	..	89.0	6	84.0	5	51.2	5	73.6
12	1981	..	..	..	184.0	15	492.4	13	206.2	9	159.0
13	1982	..	..	..	49	8	137.2	14	325.4	3	40.2
				54	1,379.6	89	2,471.9	83	3,158.5	56	2,970.8
				5.4	106.12	8.9	190.15	8.3	242.96	5.6	152 68.2

8. Mannargudi.

Serial number.	Year.	January. Number of days.	January. Rain fall.	February Number of days.	February Rain fall.	March Number of days.	March Rain fall.	April Number of days.	April Rain fall.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1	1970	..	17.6	..	..	..	44.4	..	102.2
2	1971	..	..	..	..	..	..	..	..
3	1972	..	..	..	..	..	17.2	..	5.2
4	1973	..	..	..	..	1	17.2	1	5.2
5	1974	1	3.4	2	14.2	1	43.6	1	21.0
6	1975	4	47.8	..	..	4	128.6	1	7.6
7	1976	1	2.0	..	..	1	3.6	4	36.8
8	1977	1	1.4	..	..	2	1.8	2	5.8
9	1978	..	..	..	..	..	..	1	24.0
10	1979	..	..	..	..	2	77.0	..	..
11	1980	..	..	..	..	..	..	..	..
12	1981	..	..	..	..	..	1	1,3	1.3
13		7	22.2	5	41.0	10	332.6	19	285.5
14		0.7	5.55	0.5	5.15	1.0	25.58	1.9	21.96

8. Mannargudi—cont.

Serial number.	Year.	May Number of days.	May Rain fall.	June Number of days.	June Rain fall.	July Number of days.	July Rain fall.	August. Number of days.	August. Rain fall.
(1)	(2)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
1	1970	..	36.0	..	6.6	..	667.0	..	126.2
2	1971	..	148.0	..	8.2	..	124.6	..	154.8
3	1972	..	86.6	..	50.6	..	16.4	..	8.8
4	1973	3	866.0	4	19.4	4	37.6	10	206.6
5	1974	2	9.0	8	199.6	..	21.8	6	40.4
6	1975	2	41.8	3	28.0	10	265.0	11	153.2
7	1976	7	51.8	5	53.0	6	51.0	10	81.4
8	1977	1	1.4	2	6.0	3	52.2	8	..
9	1978	..	..	..	..	..	..	..	..
10	1979	..	..	..	..	..	..	..	..
11	1980	..	..	..	..	..	..	..	..
12	1981	..	..	..	..	..	..	..	..
13		24	589.6	37	591.2	53	900.0	53	1 027.0
14		2.4	45.37	3.7	45.48	..	69 23	5.3	79.05

8. *Mannargudi*—cont.

Serial number.	*Year.*	*September.* *Number of days.*	*September.* *Rain fall.*	*October.* *Number of days.*	*October.* *Rain fall.*	*November.* *Number of days.*	*November.* *Rain fall.*	*December.* *Number of days.*	*December.* *Rain fall.*
(1)	(2)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)
1	1970	..	137.1	..	253.5	..	561.8	..	44.6
2	1971	..	72.6	..	275.6	..	28.8	..	344.6
3	1972	..	126.6	..	266.6	..	213.4	..	412.4
4	1973	..	88.8	12	316.6	10	110.2	8	156.4
5	1974	..	229.0	7	145.8	4	18.4	4	102.0
6	1975	..	38.8	14	174.4	12	192.5	8	175.0
7	1976	..	49.6	9	219.0	20	311.4	18	216.6
8	1977	..	..	20	387.0	19	622 6	4	21.4
9	1978	..	..	15	264.0	..	..	14	44.8
10	1979	..	..	..	..	..	..	..	..
11	1980	..	..	11	180 6	9	106.4	5	99.6
12	1981	..	..	14	280.2	12	310.4	9	146.0
13	1982	..	..	9	123.0	15	245.0	5	39.0
		..	420.6	111	2,886.3	101	270.9	7.5	2,206.4
		6.5	109·28	11.1	222.02	10.1	213.92	7.5	169.72

9. *Needamangalam.*

Serial number.	*Year.*	*January.* *Number of days.*	*January.* *Rainfall.*	*February.* *Number of days.*	*February.* *Rainfall.*	*March.* *Number of days.*	*March.* *Rainfall.*	*April.* *Number of days.*	*April.* *Rainfall.*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1	1970	..	..	43.4	..	7.0	..	..	32.8
2	1971	..	..	8.4	..	8.0	..	31.8	87.7
3	1972	..	..	..	..	..	..	..	..
4	1973	..	..	..	..	..	..	..	..
5	1974	..	..	..	2	33.2	..	..	..
6	1975	..	4	27.1	..	..	..	..	..
7	1976	..	..	..	..	..	..	2	38.4
8	1977	..	..	1.4	3	44.0	1	10.0	26.2
9	1978	..	..	..	..	..	..	..	..
10	1979	..	..	..	..	..	..	..	..
11	1980	..	..	..	..	..	..	..	..
12	1981	..	..	7.6	..	..	..	..	..
13	1982	..	..	..	..	..	..	..	..
		..	7	87.9	5	92.2	5	157.2	350.3
		..	0.7	6.76	0.5	7.09	0.5	12.00	1.3

9. *Needamangalam*—cont.

		May.		*June.*		*July.*		*August.*	
		Number of days.	*Rainfall.*	*Number of days.*	*Rainfall.*	*Number of days.*	*Rainfall.*	*Number of days.*	*Rainfall.*
		(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
1	1970..	..	35.5	..	134.0	..	49.9	..	123.2
2	1971..	..	41.0	..	25.4	..	57.9	..	89.0
3	1972..	..	133.8	..	9.0	..	30.4	..	8.0
4	1973..	1	3.0	3	55.4	3	27.4	5	80.0
5	1974..	1	16.2	4	56.9	3	43.3	5	91.4
6	1975..	2	23.6	..	..	12	105.8	12	177.8
7	1976..	..	..	..	..	..	..	..	..
8	1977..	..	..	4	80.4	6	103.4	9	163.3
9	1978..	4	17.8	5	21.9	3	74.4	7	101.6
10	1979..	2	1.2	..	..	6	183.6	8	6.1
11	1980..	1	8.4	2	7.8	3	149.2	7	114.2
12	1981..	1	5.0	3	17.5	4	32.0	..	2.8
13	1982..	2	67.8	..	..	9	105.8	..	..
		..	..	5	74.0	4	35.2	3	235.6
		14	353.3	26	482.3	53	996.3	55	1,293.0
		1.4	27.18	2.6	37.10	5.3	76.63	5.5	99.46

9. *Needamangalam*—cont.

		September.		*October.*		*November.*		*December.*	
		Number of days.	*Rainfall.*	*Number of days.*	*Rainfall.*	*Number of days.*	*Rainfall.*	*Number of days.*	*Rainfall.*
		(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)
1	1970..	..	106.1	..	215.7	..	592.4	..	26.8
2	1971..	..	82.8	..	393.2	..	153.8	..	443.1
3	1972..	..	170.3	..	252.2	..	206.8	..	283.3
4	1973..	3	55.2	9	187.0	7	141.2	7	153 2
5	1974..	10	191.6	7	105.0	8	19.6	3	68.0
6	1975..	7	118.2	9	161.4	9	155.8	8	124.8
7	1976..	..	..	6	127.2	16	316.2	16	250.4
8	1977..	9	116.2	17	313.4	16	618.9	3	450.4
9	1978..	4	94.8	..	..	..	..	..	..
10	1979..	10	120.5	10	143.6	6	204.1	5	11.27
11	1980..	..	..	15	313.5	14	340.6	5	106.7
12	1981..	7	75.5	10	148.9	13	315.0	5	49.2
13	1982..	13	208.6	95	2,523.1	83	2,754.4	65	1,094.1
		9	109.6	9.5	2,523.2	8.3	211.88	6.5	161·13
		72	1,449.6	..	..	..	..	6	..
		7.2	111.50	..	..	..	..	..	..

10. *Thiruvarur.*

Serial number.	Year.	January. Number of days.	January. Rainfall.	February. Number of days.	February. Rainfall.	March. Number of days.	March. Rainfall.	April. Number of days.	April. Rainfall.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1	1970	..	6.8	..	..	58.5	..	..	56.8
2	1971	..	54.5	..	..	..	..	..	19.4
3	1972	..	4.2	..	..	..	..	..	..
4	1973	..	..	..	1	10.0	36.6	..	..
5	1974	..	..	..	2	10.0	36.3	..	..
6	1975	4	100.00	..	..	..	40.2	..	..
7	1976	1	1.4	..	..	..	11.2	3	..
8	1977	..	..	..	..	..	..	2	84.0
9	1978	..	..	..	..	..	..	..	..
10	1979	..	..	..	..	3	55.0	..	..
11	1980	..	..	..	..	..	..	1	5.4
12	1981	3	33.6	..	..	..	..	2	30.4
13	1982	..	..	..	..	..	..	..	..

10. *Thiruvarur*—cont.

Serial number.	Year.	May. Number of days.	May. Rainfall.	June. Number of days.	June. Rainfall.	July. Number of days.	July. Rainfall.	August. Number of days.	August. Rainfall.
		(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
1	1970	..	46.0	..	68.1	..	70.0	..	73.0
2	1971	..	83.2	..	72.0	..	74.4	..	13.4
3	1972	..	45.2	..	86.0	..	42.7	..	2.7
4	1973	3	23.4	3	59.0	5	60.0	8	116.0
5	1974	4	56.4	3	62.2	3	31.8	3	16.2
6	1975	2	8'8	1	5.2	10	361.3	10	185.8
7	1976	..	..	4	44.8	6	95.0	11	79.8
8	1977	3	21.0	5	82.8	2	20.2	7	80.8
9	1978	3	20.8	..	..	4	75.0	7	..
10	1979	1	10.0	3	32.0	2	62.3	..	..
11	1980	2	12.4	3	31.6	4	15.8	1	..
12	1981	4	77.2	1	9.2	10	148.0	..	..
13	1982	..	..	5	60.4	4	82.0	2	9,2
		..	104.4	27	60.44	50	/99.5	607.1	1,74
..	.. ..	2,2	31.11	2.7	46.49	5.0	61.50	[4.?	46,7

10. *Thiruvarur*—cont.

Serial number	Year	September. Number of days. (19)	September. Rainfall. (20)	October. Number of days. (21)	October. Rainfall. (22)	November. Number of days. (23)	November. Rainfall. (24)	December. Number of days. (25)	December. Rainfall. (26)
1	1970	..	131.[illegible]		78.8	..	704.3	..	79.8
2	1971	..	84.1	..	418.2	..	146.9		495.0
3	1972	..	33.2	..	59.8	..	370.2		380.0
4	1973	4	26.9	11	253.2	14	212.7	9	143.3
5	1974	11	198.2	3	34.3	3	43.3	4	122.3
6	1975	8	198.2	14	353.4	13	344.4	8	152.0
7	1976	8	96.8	8	198.8	17	210.0	18	316.0
8	1977	7	14.47	27	422.4	16	649.2	4	31.2
9	1978	..	66.0	12	213.1	..	..	..	..
10	1979	..	..	12	117.2	9	224.6	6	191.0
11	1980	..	219.8	15	353.0	14	422.4	12	245.2
12	1981	19	219.0	10	134.6	20	380.6	6	81.43
13	1982	4	62.2	10.5	2,858.4	10.6	3,808.6	32	2,773.7
		1,263.8	..	105	218.18	10.6	293.97	8.2	213.36
		7.4	97.22	..	..	..	..	..	..

11. *Nagapattinam.*

Serial number. (1)	Year. (2)	January. No. of days. (3)	January. Rain-fall. (4)	February. No. of days. (5)	February. Rain-fall. (6)	March. No. of days. (7)	March. Rain-fall. (8)	April. No. of days. (9)	April. Rain-fall. (10)
1	1970	..	58.7	..	113.9	..	..	..	73.1
2	1971	..	94.1	..	2.6	..	45.1	..	64.6
3	1972	..	7.4	2	..	..	..	..	8.4
4	1973	..	..	..	0.9	1	1.2	..	..
5	1974	..	2.2	3	58.2	2	13.4	..	..
6	1975	3	58.8	..	..	1	45.0	..	..
7	1976	4	3.2	1	1.4	1	1.6	1	6.00
8	1977	2	19.2	2	50.0	..	..	..	..
9	1978	..	7.2	1	0.5	..	..	2	38.8
10	1979	..	..	..	..	..	..	..	..
11	1980	..	..	..	..	..	..	..	..
12	1981	..	..	..	..	..	..	1	0.7
13	1982	..	..	..	..	..	..	2	74.9
		12	251.4	9	227.6	5	96.3	6	266.5
		1.2	19.34	0.9	17.51	0.5	7.41	0.6	20.3

11. *Nagapattinam*—cont.

Serial number.	Year.	May. No. of days.	May. Rain-fall.	June. No. of days.	June. Rain-fall.	July. Not of days.	July. Rain-fall.	August. No. of days.	August. Rain-fall.
(1)	(2)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
1	1970	..	72.7	..	39.5	..	58.3	..	72.6
2	1971	..	97.3	..	37.8	..	97.5	..	62.4
3	1972	..	38.3	..	53.6	..	58.1	..	26.8
4	1973	..	86.2	4	39.6	4	22.5	11	82.2
5	1974	..	93.4	6	42.2	7	16.3	6	96.4
6	1975	..	..	2	6.4	11	75.6	11	173.0
7	1976	..	..	1	0.4	..	..	..	..
8	1977	5	78.4	5	146.9	7	77.8	7	66.1
9	1978	4	12.2	..	..	7	40.0	..	..
10	1979	..	..	..	..	..	..	11	73.6
11	1980	6	17.8	35.0	6	6	15.5	..	..
12	1981	1	23.6	0.6	..	7	116.2	1	13.5
13	1982	..	..	..	..	6	2.8	..	..
		23	511.9	535.7	..	50	603.8	53	679.3
		2.3	39.38	41.19		5.0	46.45	5.3	52.26

Serial number.	Year.	September. No. of days.	September. Rain-fall.	October. No. of days.	October. Rain-fall.	November. No. of days.	November. Rain-fall.	December. No. of days.	December. Rain-fall.
(1)	(2)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)
1	1970	..	114.1	..	102.8	..	114.6	..	57.4
2	1971	..	48.2	..	306.3	..	98.6	..	426.9
3	1972	..	71.8	..	559.8	..	547.5	..	427.8
4	1973	6	98.4	14	353.0	16	418.9	16	212.6
5	1974	11	82.6	11	66.4	7	195.9	10	87.5
6	1975	10	74.0	17	271.4	16	365.5	8	212.0
7	1976	..				..	..	..	..
8	1977	..	..	6	229.0	24	501.18	..	369.0
9	1978	..	..	..	..	..	..	..	..
10	1979	12	70.8	24	469.1	20	838.8	9	40.0
11	1980	..	..	..	..	..	..	..	..
12	1981	5	54.5	13	262.8	12	177.7	6	118·9
13	1982	..	11	11	211.6	16	441.8	8	188.4
		66	863.7	122	42,114	132	4,056	10.2	..
		6.6	66.44	12.2	323.99	12.2	312.01	10.2	..

12 Thiruthuraipoondi.

Serial number.	Year.		January. No. of days.	January. Rain-fall.	February. No. of days.	February. Rain-fall.	March. No. of days.	March. Rain. fall.	April. No. of days.	April. Rain-fall.
(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1	1970	..	..	64.2	..	49.2	..	6	..	63.4
2	1971	..	..	102.0	..	..	..	17.2	..	43.2
3	1972	..	..	..	..	..	..	..	..	..
4	1973	..	..	..	1	2.4		7.0	..	..
5	1974	..	1	12.2	..	..	1	34.4	..	..
6	1975	..	2	10.1	..	..	3	71.6	1	13.0
7	1976	..	..	..	1	9.0	..	..	..	..
8	1977	..	3	30.3	2	27.2	2	24.4	..	..
9	1978	..	..	..	..	..	..	..	..	..
10	1979	..	..	..	..	..	..	..	..	..
11	1980	..	..	..	..	..	..	..	..	..
12	1981	..	4	101.0	..	..	2	12.0	..	..
13	1982	..	..	..	..	..	..	..	..	..
			10	319.5	4	87.8	11	..	201.64	149.6
			1.0	24.58	0.4	6.76	1.1	15.51	0.4	11.51

Serial number.	Year.		May. No. of days.	May. Rain. fall.	June. No. of days.	June. Rain-fall.	July. No. of days.	July. Rain. fall.	August. No. of days.	August. Rain-fall.
(1)	(2)		(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
1	1970	..	..	54.6	..	187.4	..	..	..	69.4
2	1971	..	..	14.2	..	23.2	..	30.4	..	24.8
3	1972	..	..	..	..	..	..	..	..	..
4	1973	..	..	22.0	1	2.6	2	5.2	9	86.4
5	1974	..	3	80.0	4	44.8	2	16.0	1	8.0
6	1975	..	1	21.0	..	..	8	159.0	8	187.0
7	1976	..	..	..	3	54.0	3	115.0	5	180.0
8	1977	..	..	..	..	..	..	..	..	..
9	1978	..	1	24.0	2	52.0	1	7.0	2	23.0
10	1979	..	..	..	..	..	..	..	..	..
11	1980	..	..	29.0	..	..	..	180.0	1	36.0
12	1981	..	..	..	3	33.9	..	..	..	..
13	1982	..	..	..	..	..	..	..	..	22.0
			10	323.5	19	569.9	31	587.0	36	..
			1.0	24.89	1.9	43.84	3.1	45.16	3 6	53.45

12. *Thiruthuraipoondi*—cont.

Serial number.	Year.			September. Number of days.	September. Rain-fall.	October. Number of days.	October. Rain-fall.	November. Number of days.	November. Rain-fall.	December. Number of days.	December. Rain-fall.
(1)	(2)			(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)
1	1970	..	..	..	61.4	..	102.4	..	683.4	..	38.2
2	1971	..	..	..	..	..	..	..	..	..	..
3	1972	..	..	..	..	..	..	..	..	..	..
4	1973	..	..	5	72.4	12	408.6	12	243.9	8	220.9
5	1974	..	..	7	256.2	7	70.7	4	57.4	7	169.2
6	1975	..	..	3	37.0	10	292.0	11	411.0	7	272.0
7	1976	..	..	7	155.0	6	195.0	21	502.0	17	287.0
8	1977	..	..	..	..	16	507.0	18	591.0	4	31.0
9	1978	..	..	..	59.0	14	200.0	..	..	..	51.0
10	1979	..	..	..	..	15	..	..	..	..	..
11	1980	..	..	6	139.0	8	225.0	9	219.0	4	258.0
12	1981	..	..	4	32.6	12	548.0	13	327.0	9	207.5
13	1982	..	..	..	..	7	127.8	15	558.1	7	117.7
				53	960.2	96	258.1	103	3,992.8	78	2,153.9
				5.3	74.87	9.6	199.01	10.3	276.37	7.8	165.69

13. *Mayiladuthurai.*

Serial number.	Year.			January. Number of days.	January. Rainfall.	February. Number of days.	February. Rainfall.	March. Number of days.	March. Rainfall.	April. Number days.	April. Rainfall.
(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1	1970	..	..	..	215.0	..	33.0	..	..	..	37.7
2	1971	..	..	..	31.4	..	7.2	..	35.2	..	39.9
3	1972	..	..	..	..	..	..	..	..	..	..
4	1973	..	..	..	..	..	..	..	..	..	..
5	1974	..	..	1	1.0	2	48.0	2	39.0	1	2.0
6	1975	..	..	3	19.0	..	..	2	77.0	..	..
7	1976	..	..	2	9.5	..	..	2	..	..	6.0
8	1977	..	..	2	9.5	..	3	28.1	..	..	21.5
9	1978	..	..	..	..	..	..	..	..	..	..
10	1979	..	..	..	..	..	..	..	..	..	..
11	1980	..	..	..	..	..	..	..	..	..	..
12	1981	..	..	2	45.2	..	..	..	12.0	..	..
13	1982	..	..	..	..	..	..	..	..	..	..
				11	347.7	6	475.7	8	194.4	19	134.1

13. *Mayiladuthurai*—cont.

Serial number.	Year.			May. Number of days.	May. Rainfall.	June. Number of days.	June. Rainfall.	July Number of days.	July Rainfall.	August. Number of days.	August. Rainfall.
(1)	(2)			(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
1	1970	..	..	..	52.3	..	26.0	142.4	..	71.0	..
2	1971	..	..	..	74.0	..	19.4	39.5	..	200.0	..
3	1972	..	..	..	78.4	..	25.1	33.8	..	29.4	..
4	1973	..	..	2	32.0	4	42.2	67.0	12	95.6	..
5	1974	..	..	4	62.0	7	53.0	11.0	7	246.4	..
6	1975	..	..	1	19.0	2	20.0	11	8	91.7	..
7	1976	..	..	..	..	2	73.0	4	59.0	143.7	..
8	1977	..	..	2	39.0	3	110.0	2	23.0	38.0	..
9	1978	..	..	4	57.8	2	86.0	7	156.6	..	..
10	1979	..	..	1	74.2	3	15.2	4	53.4	28	..
11	1980	..	..	..	..	..	..	..	..	..	..
12	1981	..	..	..	..	..	..	..	..	..	..
13	1982	..	..	..	..	..	..	..	..	..	..
				22	579.2	33	490.6	55	920.9	1,169.7	..
				2.2	44.56	3.3	37.74	5.5	70.84	89.98	..

Serial number.	Year.			September Number of days.	September Rainfall.	October Number of days.	October Rainfall.	November Number of days.	November Rainfall.	December. Number of days.	December. Rainfall.
(1)	(2)			(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)
1	1970	..	..	..	300.9	..	120.8	..	742.0	..	87.9
2	1971	..	..	..	70.0	..	381.4	..	142.0	..	539.0
3	1972	..	..	..	238.2	..	357.3	..	283.6	..	343.9
4	1973	..	..	9	112.0	13	442.4	10	192.0	8	186.0
5	1974	..	..	10	171.2	7	95.0	4	48.0	3	105.0
6	1975	..	..	9	140.1	16	304.7	14	401.9	7	188.6
7	1976	..	..	8	60.0	8	270.0	21	468.4	16	375.7
8	1977	..	..	8	68.4	152.4	191.0	20	..	7	40.0
9	1978	..	..	..	..	..	..	..	..	..	..
10	1979	..	..	7	104.7	9	55.5	11	351.4	6	130.8
11	1980	..	..	9	135.3	13	417.8	15	255.2	9	124.0
12	1981	..	..	2	19.0	7	101.6	16	350.8	7	79.6
13	1982	..	..	..	..	..	..	..	..	..	..
				70	1,572.2	106	3,255.5	113	3,933.3	83	2,750.05
				7.0	120.94	10.6	250.43	11.3	302.58	8.3	211.58

14. *Tranquebar.*

Serial number.	Year.	January. Number of days.	January. Rainfall.	February. Number of days.	February. Rainfall.	March. Number of days.	March. Rainfall.	April. Number of days.	April. Rainfall.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1	1970	..	146.0	..	56.6	..	..	..	17.0
2	1971	..	88.4	..	8.8	..	34.0	..	75.0
3	1972	..	10.2	..	..	..	..	..	18.0
4	1973	..	..	..	1.6	1	8.0	..	..
5	1974	..	..	2	33.0	2	12.8	..	..
6	1975	3	55.6	..	..	2	53.8	..	..
7	1976	2	36.4	1	3.2	1	1.2	..	..
8	1977	2	12.8	3	17.0	1	11.8	..	19.4
9	1978	..	..	..	..	..	..	..	5.0
10	1979	..	..	..	..	2	71.6	..	..
11	1980	..	..	..	..	..	..	..	..
12	1981	3	48.4	..	..	..	..	..	..
13	1982	..	..	..	..	..	..	..	..
		11	397.8	7	120.2	9	193	24	180.4
		1.1	30.60	0.7	925	0.9	14.87	13.88	..

Serial number.	Year.	May. Number of days.	May. Rainfall.	June. Number of days.	June. Rainfall.	July. Number of days.	July. Rainfall.	August. Number of days.	August. Rainfall.
(1)	(2)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
1	1970	..	79.0	..	16.6	61.0	..	..	106.0
2	1971	..	25.8	..	9.4	..	81.6	..	43.0
3	1972	..	41.0	..	7.4	..	10.0	..	31.2
4	1973	1	4.0	3	4.4	2	38.4	..	89.0
5	1974	3	45.4	3	19.6	5	51.6	4	92.6
6	1975	..	..	2	10.3	10	153.0	8	135.2
7	1976	..	1	1	14.0	2	73.0	8	14.4
8	1977	1	25.4	1	4.0	3	31.2	5	81.1
9	1978	1	34.0	1	11.2	6	78.0	1	8.6
10	1979	6	107.0	2	12.0	7	98.2	..	..
11	1980	..	..	4	33.4	3	25.0	2	62.2
12	1981	..	..	..	..	..	..	..	..
13	1982	..	..	..	..	..	..	..	..
		15	410.6	21	305.3	49	967.7	53	816.9
		1.5	31.59	2.1	23.49	4.9	74.44	5.3	62.84

14. *Tranquebar*—cont.

Serial number.	Year.	September. Number of days.	September. Rainfall.	October. Number of days.	October. Rainfall.	November. Number of days.	November. Rainfall.	December. Number of days.	December. Rainfall.
(1)	(2)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)
1	1970	..	130.2	..	63.4	..	917.0	..	25.4
2	1971	..	52.4	..	248.0	..	251.4	..	501.0
3	1972	..	163.2	..	438.7	..	395.2	..	427.0
4	1973	9	72.4	14	260.2	14	372.2	..	209.0
5	1974	5	61.2	7	48.6	8	171.2	5	117.0
6	1975	7	71.2	14	284.1	13	385.4	9	177.4
7	1976	7	129.8	7	289.0	18	630.0	13	305.7
8	1977	3	9.6	18	475.8	21	601.4	4	46.8
9	1978	6	211.0	9	173.0	..	..	16	506.4
10	1979	..	..	..	..	..	..	..	..
11	1980	4	52.2	7	81.0	13	467.5	5	96.3
12	1981	6	74.7	13	406.4	11	225.0	7	219.0
13	1982	3	26.4	9	153.9	14	458.6	7	193.0
		51	1,705.9	98	2,922.1	112	4,874.9	75	2,824.0
		5.1	131.23	9.8	224.78	11.2	375	7.5	271.23

15. Sirkali.

Serial number.	Year.	January. Number of days.	January. Rain fall.	February. Number of days.	February. Rain fall.	March. Number of days.	March. Rain fall.	April. Number of days.	April. Rain fall.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1	1970	..	92.4	..	22.4	..	..	..	12.4
2	1971	..	2.6	..	8.0	..	17.0	..	33.0
3	1972	..	..	..	..	..	..	..	..
4	1973	..	..	..	..	..	..	..	..
5	1974	..	..	1	6.0	1	6.2	..	..
6	1975	1	3.0	..	..	3	97.0	..	..
7	1976	1	26.4	1	7.0	..	..	2	1.5
8	1977	3	18.3	3	28.1	..	..	1	62.2
9	1978	..	..	..	..	..	..	..	..
10	1979	..	..	..	..	..	..	..	..
11	1980	..	..	..	..	..	..	..	..
12	1981	2	10.0	..	..	..	..	..	..
13	1982	..	..	..	..	..	..	..	..
		7	152.7	5	71.5	6	154.2	7	147.1
		0.7	11.75	0.5	5.50	0.6	11.86	0.7	11.32

15. SIRKALI—*cont.*

Serial number.	Year.			May.		June.		July.		August.	
				Number of days.	Rain-fall.	Number of days.	Rain-fall	Number of days.	Rain-fall.	Number of days.	Rain fall.
(1)	(2)			(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
1	1970	..	..	..	75.7	..	20.3	..	118.9	..	102.3
2	1971	..	..	..	33.8	..	17.4	..	21.2	..	96.8
3	1972	..	..	..	26.0	..	4.0	..	62.0	..	58.0
4	1973	..	..	2	61.0	3	55.0	2	12.0	13	111.0
5	1974	..	..	1	33.0	4	68.5	2	22.0	3	78.6
6	1975	..	..	2	37.4	2	129.0	12	119.0	10	118.0
7	1976	..	..	2	20.4	3	100.0	9	156.1	1	80.3
8	1977	..	..	5	27.2	..	119.4	6	32.2	10	121.0
9	1978	..	..	1	0.8	4	55.0	4	46.0	5	18.4
10	1979	..	..	..	..	..	..	..	143.0	..	..
11	1980	..	..	..	..	..	41.8	..	19.6	2	14.40
12	1981	..	..	..	..	..	..	..	..	..	..
13	1982	..	..	..	..	..	..	..	..	..	..
				17	368.7	27	518.4	52	859.8	57	918.6
				1.7	28.36	2.7	39.88	5.2	166.14	5.7	70.66

15. *Sirkali*—cont.

Serial number.	Year.			September.		October.		November.		December.	
				Number of days.	Rain-fall.	Number of days.	Rain-fall.	Number of days.	Rain-fall.	Number of days.	Rain-fall.
(1)	(2)			(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)
1	1970	..	..	..	114.57	..	45.0	..	880.1	..	102.8
2	1971	..	..	..	47.3	..	384.4	..	100.8	..	637.3
3	1972	..	..	..	223.0	..	426.4	..	384.3	..	412.0
4	1973	..	..	4	44.0	4	465.0	11	196.9	8	168.6
5	1974	..	..	10	167.6	10	79.8	5	59.0	6	155.0
6	1975	..	..	6	102.6	20	493.7	13	429.2	6	136.4
7	1976	..	..	10	267.7	19	402.3	22	782.9	3	18.3
8	1977	..	..	9	105.9	19	402.3	..	..	7	44.2
9	1978	..	..	4	81.3	14	338.8		..	22	537.8
10	1979	..	..	..	..	..	..	..	..	..	..
11	1980	..	..	7	121.2	8	115.4	12	302.0	6	170.8
12	1981	..	..	7	176.8	15	385.0	13	245.0	12	98.0
13	1982	..	..	7	65.4	7	138.8	17	375.4	7	107
				64	1,517.5	115	3,498.5	108	4,118.7	77	2,588.2
				6.4	116.73	11.5	269.11	10.8	316.82	7.7	199.09

6. *Neithavasal.*

Serial number.	Year.	January. Number of days.	January. Rainfall.	February. Number of days.	February. Rainfall.	March. Number of days.	March. Rainfall.	April. Number of days.	April. Rainfall.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1	1970	..	109.4	..	27.2	..	..	1	26.4
2	1971	..	26.8	..	12.6	..	88.0	–	40.8
3	1972	..	..	..	..	..	–	–	27.6
4	1973	..	..	1	0.2	..	–	–	–
5	1974	3	0.8	3	15.0	1	3.0	–	–
6	1975	1	4.8	..	..	2	49.6	–	–
7	1976	..	..	1	5.6	1	0.4	–	–
8	1977	1	0.3	1	2.0	..	..	1	21.0
9	1978	..	..	1	..	2	34.0	–	–
10	1980	..	..	..	..	..	–	–	–
11	1981	..	..	..	..	..	..	–	–
12	1982	..	..	..	..	..	–	–	–
		5	142.1	7	172.4	8	182.6	2	136.2
		0.5	10.93	0.7	13.26	0.8	14.05	0.2	10.48

16 *Neithavasal*—cont.

Serial number.	Year.	May. Number of days.	May. Rainfall.	June. Number of days.	June. Rainfall.	July. Number of days.	July. Rainfall.	August. Number of days.	August. Rainfall.
(1)	(2)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
1	1970	..	31.4	..	18.6	..	59.2	..	68.8
2	1971	..	18.4	..	43.2	..	30.6	..	71.2
3	1972	..	26.2	..	32.0	..	23.4	..	50.2
4	1973	2	12.8	3	40.8	3	9.0	11	84.4
5	1974	1	20.0	5	55.2	6	16.0	6	100.7
6	1975	..	..	4	424.6	9	79.8	10	119.6
7	1976	..	..	2	43.4	136.0	..	6	98.1
8	1977	4	29.4	5	49.2	6.6	..	14	95.0
9	1978	2	36.0	..	..	7	68.0	6	66.5
10	1979	1	52.6	..	..	2	11.0	2	41 0
11	1980	1	6.0	4	..	7	45.6	4	21.8
12	1981	3	45.0	..	..	..	..	..	..
13	1982	..	..	..	..	..	..	..	..
		15	255.8	25	758.8	531.2	..	59	827.3
		1.5	19.68	2.5	4.1	40.86	..	5.9	63.64

16. *Neithavasal*—cont.

Serial number.	Year.			September. Number of days.	September. Rain fall.	October. Number of days.	October. Rain fall.	November. Number of days.	November. Rain fall.	December. Number of days.	December. Rain fall.
(1)	(2)			(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)
1	1970	..	..	..	104.4	..	55.6	..	967.0	..	152.6
2	1971	..	..	..	31.2	..	409.6	..	135.4	..	561.2
3	1972	..	..	..	114.6	..	298.2	..	376.8	..	404.2
4	1973	..	..	8	101.6	12	341.0	11	159.8	10	183.7
5	1974	..	..	7	72.4	6	46.4	5	69.2	4	99.3
6	1975	..	..	5	119.2	11	289.8	14	576.2	8	106.0
7	1976	..	..	4	38.0	6	176.2	20	553.0	14	301.4
8	1977	..	..	4	17.2	18	495.0	21	654.6	3	32.8
9	1978	..	..	6	214.0	11	285.0	Nil.	..	15	695.4
10	1979	..	..	..	..	..	..	..	..	..	..
11	1980	..	..	..	..	..	..	..	..	..	..
12	1981	..	..	..	..	..	..	..	..	..	..
13	1982	..	..	..	..	..	..	..	..	..	..
				40	875.6	70	2,457.8	52	3,630.1	59	313.16
				4.0	67.35	7.0	189.06	8.2	279.24	5.9	240.89

17. *Thiruthuraipoondi.*

Serial number.	Year.			January. Number of days.	January. Rain fall.	February. Number of days.	February. Rain fall.	March. Number of days.	March. Rainfall.	April. Number of days.	April. Rainfall.
(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1	1970	..	..	..	87.2	..	25.0	..	..	..	31.4
2	1971	..	..	..	66.2	..	3.6	..	34.4	..	54.0
3	1972	..	..	..	18.4	..	..	..	..	..	20.4
4	1973	..	..	..	..	..	0.8	..	2.0	1	8.4
5	1974	..	..	2	5.4	2	23.4	2	10.8	1	10.6
6	1975	..	..	5	21.4	..	..	4	102.0	2	6.0
7	1976	..	..	2	2.5	..	..	..	3.1	2	19.0
8	1977	..	..	2	8.2	3	23.4	4	17.4	2	19.0
9	1978	..	..	..	1.0	..	..	..	..	..	..
10	1979	..	..	..	..	..	..	..	..	..	..
11	1980	..	..	..	..	..	..	..	..	..	..
12	1981	..	..	4	63.6	..	..	..	..	..	..
13	1982	..	..	..	..	..	..	..	..	..	..
				16	273.9	6	76.2	16	193.8	16	269.4
				1.6	1.07	0.6	5.87	1.6	14.91	1.6	20.73

17. *Thiruthuraipoondi*—cont.

Serial number.	Year.	May. Number of days.	May. Rain fall.	June. Number of days.	June. Rain fall.	July. Number of days.	July. Rainfall.	August. Number of days.	August. Rain fall.
(1)	(2)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
1	1970	..	31.4	..	18.6	..	59.2	..	68.8
2	1971	..	18.4	..	43.2	..	30.6	..	71.2
3	1972	..	26.2	..	32.0	..	23.4	..	60.2
4	1973	3	12.8	3	40.0	3	9.0	11	84.4
5	1974	1	20.0	5	55.2	6	16.0	6	100.7
6	1975	..	..	4	424.6	9	79.8	10	119.6
7	1976	..	..	2	43.4	2	136.0	6	98.1
8	1977	4	29.4	5	49.2	5	52.6	14	95.0
9	1978	2	36.0	..	..	7	68.0	6	66.5
10	1979	1	52.6	2	5.6	2	11.0	2	41.0
11	1980	..	6.0	4	47.0	7	36.6	4	21.8
12	1981	3	45.0	..	..	..	..	..	..
13	1982	..	..	..	..	..	..	..	..
	Total ..	15	255.8	25	758.8	41	531.2	59	827.3
		1.5	19.68	2.5	58.37	4.1	5.9	5.9	63.64

17. *Thirnthuraipnoodi*—cont.

Serial number.	Year.	September. Number of days.	September. Rain fall.	October. Number of days.	October. Rain fall.	November. Number of days.	November. Rain fall.	December. Number of days.	December. Rain fall.
(1)	(2)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)
1	1970	..	104.4	..	55.6	..	967.7	..	152.6
2	1971	..	31.2	..	409.8	..	135.4	..	561.2
3	1972	..	114.6	..	298.2	..	376.8	..	404.2
4	1973	8	101.6	12	341.0	11	159.8	10	183.7
5	1974	7	72.4	6	46.4	5	69.2	4	99.3
6	1975	5	119.4	1	289.8	14	476.2	8	106.0
7	1976	4	38.0	6	176.2	20	553.0	14	302.4
8	1977	4	17.2	18	495.0	21	654.6	3	32.8
9	1978	6	214.0	11	285.0	Nil.	..	15	695.4
10	1979	..	..	..	..	..	..	..	..
11	1980	6	63.0	6	50.8	238.1	238.1	5	595.0
12	1981	..	..	..	..	..	..	..	..
13	1982	..	..	..	..	..	..	..	..
	Total ..	40	875.6	70	2,457.8	82	3,630.1	59	313.16
		4.0	67.35	7.0	189.06	8.2	279.24	5.9	240.89

13. VEDARANYAM.

Serial number.	Year.	January. Number of days.	January. Rain fall.	February. Number of days.	February. Rain fall.	March. Number of days.	March. Rainfall.	April. Number of days.	April. Rainfall.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1	1970	..	0.7	..	46.4	..	..	..	48.6
2	1971	..	163.4	..	..	..	..	40.2	58.4
3	1972	..	2.48	..	..	..	..	..	3.6
4	1973	..	..	..	..	..	..	..	..
5	1974	3	7.2	2	221.4	1	38.4	3	15.0
6	1975	2	41.0	..	..	4	33.6	2	57.4
7	1976	2	8.0	1	1.2	1	1.4	4	47.6
8	1977	4	38.6	1	27.6	4	17.4	3	12.4
9	1978	2	8.4	..	..	..	..	..	..
10	1979	..	..	..	..	..	..	3	26.8
11	1980	..	..	..	..	..	..	..	..
12	1981	4	55.4	..	..	..	..	..	..
13	1982	..	..	..	..	..	..	1	2.1
Total ..		17	347.5	4	97.81	43	211.9	16	274.4
		1.7	26.73	0.4	7.53	1.3	16.30	1.6	24.11

VEDARANYAM—*cont.*

Serial number.	Year.	May. Number of days.	May. Rainfall.	June. Number of days.	June. Rain fall.	July. Number of days.	July. Rain fall.	August. Number of days.	August. Rain fall.
(1)	(2)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
1	1970	..	37.6	..	53.4	..	166.6	..	127.6
2	1971	..	56.0	..	13.8	..	47.8	..	219.0
3	1972	..	114.0	..	55.2	..	40.0	..	34.4
4	1973	2	74.6	..	11.6	..	..	11	160.4
5	1974	7	104.2	5	88.2	7	50.6	2	23.2
6	1975	3	45.6	3	15.2	3	82.6	9	202.6
7	1976	..	..	2	11.6	5	15.0	6	49.6
8	1977	6	96.2	3	41.6	3	67.8	6	92.8
9	1978	1	12.0	..	..	4	31.0	2	12.0
10	1979	..	..	..	..	3	7.5	4	47.0
11	1980	3	23.3	..	..	4	7.5	..	..
12	1981	4	98.0	..	..	8	171.6	..	..
13	1982	..	..	1	18.2	1	23.6	..	..
Total ..		26	661.5	16	321.0	39	750.9	43	1023.4
		2 6	50.89	1.6	24.70	3.9	57.77	4.3	78.73

18. VEDARANYAM—*cont.*

Serial number.	Year.	September.		October.		November.		December.	
		Number of days.	Rain fall.	Number of days.	Rainfall.	Number of days.	Rain fall.	Number of days.	Rainfall.
(1)	(2)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)
1	1970	..	58.2	..	270.6	..	1016.1	..	30.4
2	1971	..	32.7	..	237.6	..	212.2	..	655.4
3	1972	..	173.8	..	438.2	..	278.6	..	413.4
4	1973	7	100.2	15	400.3	15	207.2	11	258.4
5	1974	10	183.8	12	161.4	6	17.4	9	254.2
8	1975	7	83.8	15	249.2	23	671.0	10	405.4
7	1976	7	51.9	12	241.6	23	442.2	19	502.2
8	1977	5	68.0	19	393.8	16	642.8	4	50.4
9	1978	7	144.0	12	279.6	..	..	18	516.9
10	1979	..	..	..	..	..	..	..	..
11	1980	4	48.5	7	293.6	13	479.9	7	50.6
12	1981	8	78.5	11	472.9	13	306.8	10	301.8
13	1982	8	119.8	7	103.6	18	582.2	8	107.6
	Total ..	63	1143.2	110	3542.0	127	4916.4	96	3547.10
		6.3	87.49	11.0	372.47	12.7	378.19	9.6	272.86

19. *Muthupet.*

Serial number.	Year.	January.		February.		March.		April.	
		Number of days.	Rainfall.	Number of days.	Rainfall.	Number of days.	Rainfall.	Number of days.	Rainfall.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1	1970	..	44.4	..	43.0	..	19.3	..	60.0
2	1971	..	60.6	..	38.4	..	50.4	..	52.2
3	1972	..	28.6	..	..	..	..	..	7.2
4	1973	..	..	..	2	2	20.4	..	..
5	1974	..	..	..	26.0	2	66.4	3	64.2
6	1975	3	32.4	1	6.4	2	23.2	2	46.6
7	1976	..	..	..	..	1	13.5	4	35.3
8	1977	..	..	3	..	..	37.0	4	62.2
9	1978	..	..	..	..	..	..	2	..
10	1979	..	..	..	..	..	..	..	..
11	1980	..	..	..	..	..	..	19	..
12	1981	3	34.3	..	..	..	..	..	..
13	1982	..	..	..	..	..	..	3	24.5
	Total ..	6	200.3	137.2	11	230.2	37	520.3	..
		0.6	15.41	0.6	10.56	17.71	3.7	50.03	..

19. *Muthupet*—cont.

Serial number.	Year.			May.		June.		July.		August.	
				Number of days.	Rainfall.	Number of days.	Rainfall.	Number of days.	Rainfall.	Number of days.	Rainfall.
(1)	(2)			(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
1	1970	..	..	..	102.2	..	43.3	..	31.7	..	77.9
2	1971	..	..	..	83.6	..	13.8	..	113.8	..	56.4
3	1972	..	..	..	139.2	..	27.4	..	81.4	..	41.4
4	1973	..	..	3	23.6	1	3.6	2	6.2	10	61.4
5	1974	..	..	4	16.8	5	160.6	6	20.4	4	25.4
6	1975	..	..	4	20.2	..	..	7	151.8	7	94.8
7	1976	..	..	..	..	..	..	1	0.1	7	88.2
8	1977	..	..	4	37.6	3	30.1	2	18.2	9	94.4
9	1978	..	..	3	127.0	..	..	7	128.4	4	10.1
10	1979	..	..	..	..	..	..	4	55.5	..	—
11	1980	..	..	1	20.0	..	..	2	20.2	2	58.0
12	1981	..	..	4	51.0	1	2.2	7	223.0	2	..
13	1982		..	..	..	1	6.0	1	7.2	..	..
		Total	..	23	612.2	287.0	39	857.7	43		617,5
				2.3	47.79	1.1	22.08	3.9	69.9	4.3	47.5

19. *Muthypet*—cont.

Serial number.	Year.			September.		October.		November		December.	
				Number of days.	Rainfall.	Number of days.	Rainfall.	Number of days.	Rainfall.	Number of days.	Rainfall.
(1)	(2)			(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)
1	1970	..	..	..	52.4	..	243.3	.	526.9	..	29.6
2	1971	..	..	..	77.4	..	338.9	..	96.4	..	527 6
3	1972	..	..	..	141.6	..	260.0	..	221.4	..	249.9
4	1973	..	..	9	75.6	15	387.6	13	179.7	8	271.4
5	1974	..	..	9	190.6	12	240.5	2	6.2	6	108.2
6	1975	..	..	9	199.2	13	268.1	8	302.8	8	147.7
7	1976	..	..	7	78.4	8	141.2	17	405.4	17	187.5
8	1977	..	..	7	202.6	23	465.0	15	547.0	3	32.0
9	1978		..	7	69.0	10	230.8	..	..	17	374.0
10	1979	..	..	..	..	..	..	..	..	..	..
11	1980	..	..	5	94.5	11	185.5	9	212.5	3	32.0
12	1981	..	..	9	287.4	12	250.3	14	273.0	11	176.0
13	1982	..	..	..	..	7	57.0	9	105	15	..
14	1983	..	..	7	57	9	105	15	459.2	7	37.8
		Total	..	69	1,525.17	113	3,116.1	83	3,230.8	79	2,173.7.
				6.9	1,17.36	11.3	239.7	8.3	228.52	7.9	16721

20. *Kumbakonam.*

Serial number.	*Year.*	*January.* *Number of days.*	*January.* *Rainfall.*	*February.* *Number of days.*	*February.* *Rainfall.*	*March.* *Number of days.*	*March.* *Rainfall.*	*April.* *Number of days.*	*April.* *Rainfall*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1	1970	..	231.0	..	48.0	..	..	..	..
2	1971	..	10.4	..	10.0	..	40.4	..	77.8
3	1972	..	..	..	..	..	..	..	..
4	1973	..	..	..	..	..	..	..	..
5	1974	..	..	2	29.0	2	22.0	..	10.0
6	1975	4	16.0	..	..	2	90.0	..	16.0
7	1976	..	..	..	..	..	..	2	16.0
8	1977	1	.0	2	35.0	1	40.0	4	36.0
9	1978	1	1.0	..	..	..	..	..	..
10	1979	..	..	..	..	..	..	..	..
11	1980	..	..	..	..	..	..	..	1.0
12	1981	2	6.0	..	..	..	..	..	..
13	1983	..	..	..	..	..	..	..	1.8
		8	267.4	4	122.0	9	217.4	17	192.8
		0.8	20.57	0.4	9.38	0.9	16.72	1.7	14.83

20. *Kumbakonam.*

Serial number.	*Year.*	*May.* *Number of days.*	*May.* *Rainfall.*	*June.* *Number of days.*	*June.* *Rainfall.*	*July.* *Number of days.*	*July.* *Rainfall.*	*August.* *Number of days.*	*August.* *Rainfall.*
(1)	(2)	(11)	(12)	(13)	(14)	15)	(16)	(17)	(18)
1	1970	..	106 4	..	145.6	..	53.4	..	298.8
2	1971		.7		14.0	..	43.0	..	48.0
3	1972	..	6.5	..	4.0	..	14.0	..	3.0
4	1973	2	7.0		130.8	5	61.8	6	55.0
5	1974	4	37.0	7	172.0	6	14.0	2	21.2
6	1975	3	64.0	2	7.0	12	114.0	10	176.0
7	1976	..	..	5	38.0	8	46.0	9	173.0
8	1977	5	29.0	4	18.0	1	35.0	13	218.0
9	1978	..	..	..	..	..	104.2	2	6.6
10	1979	..	..	..	..	3	..	..	..
11	1980	4	77.0	3	9.0	6	44.0	3	48.0
12	1981	6	94.0	..	..	8	129.0	..	..
13	1982	..	..	3	24.0	5	36.0	4	81.0
		24	1,569.2	32	589.4	57	757.4	49	1,127.6
		2.4	120.71	3.2	45.34	5.7	58.26	4.9	86.74

20. *Kumbakonam.*

Serial number.	*Year.*	*September.*		*October.*		*November.*		*December.*	
		Number of days.	*Rainfall.*	*Number of days.*	*Rainfall.*	*Number of days.*	*Rainfall.*	*Number of days.*	*Rainfall.*
(1)	(2)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)
1	1970	..	97.9	..	104.7	..	676.6	..	52.4
2	1971	..	55.0	..	468.0	..	124.0	..	375.0
3	1972	..	191.0	..	262.0	..	210.0	..	253.0
4	1973	7	88.0	11	272.0	9	158.0	9	186.8
5	1974	9	206.4	11	209.0	4	15.0	3	105.0
6	1975	4	53.4	14	312.0	13	260.0	8	152.0
7	1976	9	68.0	10	161.0	19	301.0	14	179.0
8	1977	9	168.4	12	225.0	20	..	..	28.0
9	1979	7	..	..	..	..	..	..	..
10	1980	..	89.0	6	72.0	11	121.0	6	71.0
11	1981	17	245.0	14	332.0	17	267.0	12	113.0
12	1982	7	139.0	11	15.5	17	32.3	5	33
		76	1,463.6	109	2,853.7	110	3,127.6	80	1,912.3
		7.6	112.58	1.9	219.52	11.0	240.58	8.0	147.09
	1978	9	168.4	12	225.0	20	..	..	28.0

21. *Aduthurai.*

May. Number of days. (11)		May. Rain-fall. (12)	June. Number of days. (13)	June. Rain-fall. (14)	July. Number of days. (15)	July. Rain-fall. (16)	August. Number of days (17)	August. Rain-fall. (18)
..	..	108.9	..	69.8	..	65.1	..	132.6
..	..	2.51	..	13.2	..	37.9	..	83.5
..	..	82.2	..	32.0	..	21.9	..	27.4
3	..	8.4	6	108.5	4	27.8	12	47.4
7	..	41.0	7	110.8	6	34.4	6	124.0
4	..	26.0	3	30.0	13	118.8	12	137.2
..	..	..	4	48.0	7	32.2	8	113.8
7	..	63.4	2	10.0	3	21.4	13	173.4
5	..	52.8	..	..	4	103.3	7	150.8
2	..	33.6	3	34.2	3	49.8	..	..
3	..	4.6	3	30.4	5	37.0	1	23.2
4	..	82.4	..	..	6	129.2	..	..
..	..	..	4	15.2	3	91.6	3	15.8
35	..	578.4	32	501.1	54	840.4	62	1029.1
3.5	..	44.49	3·2	38.55	5.4	63.11	6.2	79.16

21. *Aduthurai.*

Serial number. (1)	Year. (2)		September. Number of days. (19)	September. Rain-fall. (20)	October. Number of days. (21)	October. Rain-fall. (22)	November. Number of days. (23)	November. Rain fall. (24)	December. Number of days. (25)	December. Rain-fall. (26)
1	1970 ..	..	..	60.7	..	147.7	..	625.5	..	70.8
2	1971 ..	..	..	63.3	..	421.8	..	115.2	..	479.6
3	1972 ..	..	..	279.8	..	261.5	..	249.4	..	298.9
4	1973 ..	..	11	101.5	14	127.0	11	176.7	9	190.6
5	1974 ..	..	13	206.4	10	58.1	6	24.7	3	90.8
6	1975 ..	..	7	160.2	15	319.9	14	326.7	8	154.4
7	1976 ..	..	7	110.5	10	152.4	20	315.1	16	274.0
8	1977 ..	..	8	185.6	20	346.2	25	631.8	5	22.0
9	1978 ..	..	4	98.4	12	138.3	..	..	23	381.4
10	1979 ..	..	..	..	..	..	..	..	..	..
11	1980 ..	..	7	80.4	7	51.8	10	136.9	5	66.2
12	1981 ..	..	16	199.0	15	378.0	15	322.0	11	116.9
13	1982 ..	..	5	56	10	139.8	16	305.4	7	42.8
			78	1,601.6	113	2542.6	117	3,229.4	87	2,188.4
			7.8	123.20	11.3	195.58	11.7	248.42	8.7	168.34

22. Pattukkottai.

Serial number.	Year.	January. Number of days.	January. Rain fall.	February. Number of days.	February. Rain fall.	March. Number of days.	March. Rain fall.	April. Number of days.	April. Rain fall.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1	1970	..	48.0	..	10.4	..	..	..	52.6
2	1971	..	31.2	..	2.6	..	4.2	..	89.0
3	1972	..	12.9	..	..	..	..	..	..
4	1973	..	..	..	..	1	0.3	..	..
5	1974	..	..	..	..	..	..	..	..
6	1975	4	29.0	..	..	5	86.8	3	25.0
7	1976	..	..	..	..	1	17.0	6	63.5
8	1977	..	..	1	..	..	..	1	32.2
9	1978	..	..	..	..	..	..	2	51.3
10	1979	..	..	..	..	..	..	..	..
11	1980	..	..	..	..	..	..	..	1.0
12	1981	4	19.0	..	..	..	..	..	..
13	1982	..	..	..	..	..	..	..	..
		8	140.1	6	63.00	12	227.5	20	347.0
		0.8	10.78	0.6	4.85	1.2	17.50	2.0	26.69

22. Pattukkottai.

Serial number.	Year.	May. Number of days.	May. Rain fall.	J ne. Number of days.	J ne. Rain fall.	July. Number of days.	July. Rain fall.	Augu t. Number of days.	Augu t. Rain fall.
(1)	(2)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
1	1970	..	130.8	..	27.2	..	68.2	..	171.2
2	1971	..	26.6	..	75.6	..	275.0	..	773.2
3	1972	..	151.0	..	12 7	..	47.2	..	25.4
4	1973	..	..	..	..	7	1.1	7	65.0
5	1974	..	14.0	3	14.0	7	18.0	5	67.2
6	1975	3	17.0	4	31.2	11	156.0	10	206.6
7	1976	..	..	4	100.4	3	18.4	6	201.8
8	1977	5	54.6	3	99.0	2	46.4	6	96.0
9	1978	2	23.4	..	..	4	75.0	3	44.0
10	1979	1	16.4	1	2.0	4	101.4	5	109.8
11	1980	1	28.0	3	41.3	6	69.2	3	79.0
12	1981	7	120.0	1	9.0	7	127.2	..	..
13	1982	4	23.7	5	23.7	3	14.5	1	4.2
		25	605.5	24	435.5	49	1,017.6	46	1,787.2
		2.5	46.58	2.4	33.5	4.9	78.28	4.6	37.4

22. *Pattukkottai.*

Serial number.	Year.	September. Number of days.	September. Rain-fall.	October. Number of days.	October. Rain-fall.	November. Number of days.	November. Rain-fall.	December. Number of days.	December. Rain-fall.
(1)	(2)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)
1	1970	..	43.6	..	161.2	..	331.3	..	10.0
2	1971	..	35.7	..	200.6	..	99.4	..	317.4
3	1972	..	110.6	..	190.2	..	214.4	..	295.4
4	1973	6	48.0	14	127.0	7	63.0	5	73.0
5	1974	10	313.0	7	139.0	2	19.0	5	89.0
6	1975	10	206.6	12	273.2	11	216.5	7	171.6
7	1976	7	138.3	9	219.0	17	320.4	14	250.2
8	1977	4	132.0	21	460.0	20	522.9	4	39.8
9	1978	5	99.8	12	193.6	..	..	5	331.2
10	1979	..	..	..	..	..	..	..	..
11	1980	6	70.8	10	165.10	8	87.8	3	28.2
12	1981	9	187.0	12	195.7	13	291.5	7	167.0
13	1982	5	45.5	12	110.4	16	318.5	4	37.8
		62	1,430.19	109	2,434.9	94	2,484.7	64	1,811.10
		6.2	110.07	10.9	187.30	9.4	191.13	6.4	139.31

23. *Adirampattinam.*

Serial number.	Year.	January. Number of days.	January. Rain fall.	February. Number of days.	February. Rain fall.	March. Number of days.	March. Rain fall.	April. Number of days.	April. Rain fall.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1	1970	..	57.6	..	19.0	..	6.2	..	93.2
2	1971	..	42.0	..	20.4	..	121.4	..	64.0
3	1972	..	15.0	..	..	..	..	..	7.0
4	1973	..	..	..	..	3	7.4	1	19.0
5	1974	1.0	1.0	3	77.0	2	20.4	3	42.0
6	1975	3	30.0	..	..	4	86.8	3	135.0
7	1976	1	1.0	..	..	1	75.2	5	57.8
8	1977	1	1.2	..	22.7	2	44.0	2	16.1
9	1978	..	..	..	..	1	..	..	2.0
10	1979	..	..	..	..	..	..	5	40.4
11	1980	..	..	..	..	..	..	1	1.0
12	1981	3	19.1	..	..	..	9.2	5	..
13	1982	..	..	..	..	..	..	1	5.6
		9	166.9	5	139.1	15	409.0	24	443.1
		0.9	12.84	0.5	10.70	1.5	31.46	2.4	34.08

23. Adirampattinam.

Serial number.	Year.	May. Number of days.	May. Rain fall.	June. Number of days.	June. Rain fall.	July. Number of days.	July. Rain fall.	August. Number of days.	August. Rain fall.
(1)	(2)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
1	1970	..	142.2	..	63.8	..	71.4	..	131.6
2	1971	..	72.0	..	68.4	..	126.0	..	105.2
3	1972	..	159.6	..	22.4	..	65.8	..	64.6
4	1973	3	27.0	7	24.0	4	5.0	12	158.8
5	1974	7	34.0	5	59.2	8	108.0	5	83.4
6	1975	5	7.4	4	19.8	10	187.2	12	129.6
7	1976	3	11.0	4	74.5	1	12.3	8	123.2
8	1977	6	164.4	3	24.8	2	27.2	9	199.9
9	1978	3	11.0	..	..	5	46.2	8	41.8
10	1979	..	..	2	8.0	4	31.8	6	143.8
11	1980	2	90.6	1	2.6	2	16.0	4	111.8
12	1981	6	78.4	2	46.1	10	167.8	..	..
13	1982	..	..	4	9.8	4	9.8	..	..
		35	807.6	34	433.8	51	904.5	64	1,293.7
		3.5	62.12	3.4	33.37	5.1	69.58	6.4	99.52

23. Adirampattinam.

Serial number.	Year.	September. Number of days.	September. Rain fall.	October. Number of days.	October. Rain fall.	November. Number of days.	November. Rain fall.	December. Number of days.	December. Rainfall.
(1)	(2)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)
1	1970	..	43.2	..	297.0	1	410.0	1	14
2	1971	..	82.6	..	226.4	..	55.4	..	512.4
3	1972	..	265.0	..	226.6	..	223.4	..	243.7
4	1973	13	199.4	17	398.4	13	186.0	10	164.8
5	1974	10	313.0	12	151.4	2	14.6	7	96.2
6	1975	14	277.4	12	285.4	16	308.4	8	137.0
7	1976	5	50.6	1.2	187.0	20	363.8	18	205.1
8	1977	5	181.2	26	1,010.0	21	695.2	3	338.5
9	1978	6	70.6	13	208.7	..	..	15	240.0
10	1279	..	..	..	..	..	..	..	..
11	1980	5	121.4	13	172.0	9	115.2	3	56.2
12	1981	10	179.0	12	215.4	16	248.8	8	251.4
13	1982	6	113.6	14	77.8	15	352.	3	32.8
		74	1,897.0	132	3,456.1	112	2,974.6	75	1,992.1
		7.4	145.92	13.2	265.85	11.2	228.82	7.5	153.24

MONVHLY RAINFALL STATEMENT FROM 1970 to 1982

24, *Nannilam*—cont.

Serial number.	Year.	January. Number of days.	January. Rain fall.	February. Number of days.	February. Rain fall.	March. Number of days.	March. Rain fall.	April Number of days.	April Rain fall.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1	1970	..	1,374	..	..	..	..	..	..
2	1971	..	33.1	..	13.0	..	42.0	..	6.0
3	1972	..	..	..	..	..	..	..	..
4	1973	..	..	..	7.6	..	..	..	..
5	1974	..	..	..	37.0	1	47.2	..	..
6	1975	3	22.0	..	..	3	53.9	..	..
7	1976	1	3.0	..	..	1	1.8	4	47
8	1977	2	4.6	1	17.6	2	8.6	2	47.0
9	1978	..	..	..	..	..	..	..	2.1
10	1979	..	..	..	..	2	57.6	..	..
11	1980	..	..	..	..	..	..	2	6.3
12	1981	2	23.4	..	..	..	..	..	6.1
13	1982	..	..	..	..	..	..	..	26.3
		8	213.5	4	75.2	9	201.1	31	222.6
		0.8	16.42	0.4	5.78	0.9	15.47	3.1	17.1

24, *Nannilam*—cont.

Serial number.	Year.	May. Number of days.	May. Rain fall.	June. Number of days.	June. Rain fall.	July. Number of days.	July. Rain fall.	August. Number of days.	August. Rainfall
(1)	(2)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
1	1970	..	51.1	..	59.0	..	50.0	..	170.0
2	1971	..	31.0	..	30.0	..	87.9	..	35.0
3	1972	..	77.8	..	43.0	..	8.5	..	14.4
4	1973	2	14.8	4	49.0	5	21.0	10	118.8
5	1974	2	27.0	3	56.0	2	42.2	3	48.0
6	1975	1	7.5	..	..	6	81.4	10	188.4
7	1976	..	..	5	53.7	4	35.2	9	168.9
8	1977	4	37.4	5	88.2	3	31.8	10	139.0
9	1978	3	32.2	..	..	4	62.9	3	21.2
10	1979	1	25.0	1	3.2	2	59.3	2	87.8
11	1980	2	9.4	1	4.8	3	23.5	1	18.8
12	1981	3	17.2	1	9.0	5	139.4	..	..
13	1982	3	36.8	7	53.0	1	11.0	2	55.10
		21	357.2	27	448.9	35	664.1	50	1,065.4
		2.1	27.48	2.7	34.53	3.5	51.08	5.0	81.85

MONTHLY RAINFALL STATEMFNV FROM 1970 to 1982

24, *Nannilam.*

Serial number.	*Year.*	*September.* *Number of days.*	*September.* *Rain fall.*	*October.* *Number of days.*	*October.* *Rain fall.*	*November.* *Number of days.*	*November.* *Rain fall.*	*December.* *Number of days.*	*December.* *Rain fall.*
(1)	(2)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)
1	1970	..	110.2	..	132.2	..	722.2	..	58.0
2	1971	..	41.0	..	446.6	..	110.0	..	440.5
3	1972	..	152.6	..	345.3	..	237.7	..	358.5
4	1973	3	76.5	10	215.5	9	221.5	7	312.1
5	1974	5	101.5	4	43.0	3	61.8	4	133.0
6	1975	7	63.4	12	323.8	11	353.2	7	153.2
7	1976	8	144.2	7	187.0	20	376.0	19	344.2
8	1977	4	41.4	22	388.1	21	678.6	3	36.3
9	1978	5	115.4	..	193.1	..	..	19	492.3
10	1979	..	..	..	..	..	..	..	..
11	1980	5	35.8	11	130.4	8	162.0	5	101.4
12	1981	9	196.0	13	468.3	17	429.8	12	221.9
13	1982	2	37.9	9	125.8	13	375.8	6	72.6
		48	1,115.9	99	2,999.9	112	3,728.6	82	7,724.0
		4.8	85.84	9.9	230.79	11.2	285.82	8.2	209.54

25. *Kodavasal.*

Serial number.	*Year.*	*January.* *Number of days.*	*January.* *Rainfall.*	*February.* *Number of days.*	*February.* *Rainfall.*	*March.* *Number of days.*	*March.* *Rainfall.*	*April.* *Number of days.*	*April.* *Rainfall.*
(1)	(2)	(3)	(4P	(5)	(6)	(7)	(8)	(9)	(10)
1	1970	..	105.5	..	52.2	..	..	..	21.3
2	1971	..	29.7	..	..	..	38·6	..	60.4
3	1972	..	..	..	..	..	..	..	..
4	1973	..	..	..	..	..	..	..	..
5	1974	..	..	2	59.2	..	..	..	..
6	1975	4	30.0	..	..	4	140.6	..	..
7	1976	1	8.4	..	..	1	3.0	2	36.0
8	1977	1	18	3	24.2	..	..	..	..
9	1978	..	..	..	..	..	..	1	32.0
10	1979	..	..	..	..	2	41.5	..	..
11	1980	..	..	..	..	..	..	2	43.4
12	1981	2	21.6	..	..	..	..	1	20.0
13	1982	..	..	..	..	..	..	..	..
		8	197.0	5	135.5	7	223.7	6	213
		0.8	15.15	0.5	10.42	0.7	17.21	0.6	16.3

25. *Kodavasal*—cont.

Serial number.	Year		May. Number of days.	May. Rainfall.	June. Number of days.	June. Rainfall.	July. Number of days.	July. Rainfall.	August. Number of days.	August. Rainfall.
			(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
1	1970	.. ..	..	80.8	..	32.0	..	34.5	..	141.1
2	1971	.. ..	..	98.4	..	17.1	..	93.8	..	22.1
3	1972	.. ..	..	66.2	..	..	..	49.0	..	..
4	1973	.. ..	2	17.6	5	49.2	5	72.4	10	101.2
5	1974	.. ..	4	79 0	6	117.0	1	30.0	2	26.0
6	1975	.. ..	3	18.6	2	12.0	10	112.0	9	142.4
7	1976	.. ..	..	..	5	35.3	4	113.0	8	86.8
8	1977	.. ..	1	35.0	3	12.0	3	28.6	8	94.0
9	1978	.. ..	3	47.2	..	..	2	48.0	4	94.0
10	1979	.. ..	1	15.2	1	13.2	2	54.0	5	174.0
11	1980	.. ..	1	15.1	1	12.1	1	8.1	1	51.21
12	1981	.. ..	..	..	1	53.8	3	30.6	4	129.8
13	1982	.. ..	..	..	..	..	..	..	..	..
			16	475.2	27	353.8	39	854.0	51	1,107.0
			1.6	36.54	2.7	27.22	3.9	65.69	5.1	85 15

25. *Kodavasal*—cont.

Serial number.	Year.		September. Number of days.	September. Rainfall.	October. Number of days.	October. Rainfall.	November. Number of days.	November. Rainfall.	December. Number of days.	December. Rainfall.
			(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)
1	1970	.. ..	..	95.9	..	152.4	..	441.6	..	26.6
2	1971	.. ..	..	60.5	..	311.9	..	142.6	..	389.1
3	1972	.. ..	..	147.9	..	433.9	..	175.0	..	208.5
4	1973	.. ..	3	28.7	12	234.8	6	236.0	5	208·3
5	1974	.. ..	8	161.6	4	50.0	3	32.0	3	150.0
6	1975	.. ..	5	151.8	11	281.8	10	245.8	8	132.2
7	1976	.. ..	4	38.0	7	212.0	17	431.2	15	281.4
8	1977	.. ..	7	72.4	17	238.6	22	663.5	3	31.8
9	1978	.. ..	7	81.6	13	154.4	..	..	17	404.6
10	1979	.. ..	..	..	..	..	..	..	..	..
11	1980	.. ..	5	104.2	5	84.1	7	136.8	6	72.0
12	1981	.. ..	13	361.0	12	447.2	15	353.6	8	132.0
13	1982	.. ..	4	53.2	8	127.2	13	375.8	5	584.4
			56	1,356.3	89	2,723.3	93	3,243.3	70	2,124.8
			5.6	10.33	8.9	209.50	9.3	249.48	7.0	163.45

APPENDIX-I-C.

Statement showing the Annual Rain fall in Thanjavur Forest Division.

Average from 1970–1983.

Serial number.	*Name of Station.*	*January.*		*February.*		*March.*	
		Number of days.	*Rainfall.*	*Number of days.*	*Rainfall.*	*Number of days.*	*Rainfall.*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Thanjavur	0.2	2.49	0.5	6.2	1	24.7
2	Thiruvayaru	0.3	1.95	0.4	6.57	1	21.6
3	Vallam	0.2	0.78	0.4	2.94	1	17.17
4	Thirukkattupalli	0.3	4.05	0.4	4.83	1	10.01
5	Grand anicut	0.1	1.6	0.4	5.58	1	12.48
6	Papanasam	1.0	2.11	0.4	6.05	1	16.31
7	Valangaiman	0.3	10.25	0.3	7.14	0.3	15.05
8	Mannargudi	1	5.55	1	3.15	1	25.58
9	Needamangalam	1	6.76	1	7.09	1	12.09
10	Thiruvarur	1	15.42	1	8.47	1	13.82
11	Nagappattinam	1	19.34	1	17.51	1	7.41
12	Thirupondi	1	24.58	0.4	6.76	1	15.51
13	Myladuthurai	1	26.60	1	36.58	1	14.96
14	Tranquebar	1	30.60	1	9.35	1	14.87
15	Sirkali	1	11.75	1	5.50	1	11.86
16	Neithavasal	1	10.93	1	13.26	1	14.05
17	Thiruthuraipoondi	2	21.07	1	5.87	2	14.91
18	Vedaranyam	2	26.73	0.4	7.53	1	16.30
19	Muthupet	1	15.4	1	10.56	1	17.71
20	Kumbakonam	1	20.57	0.4	9.38	1	16.72
21	Aduthurai	1	20.09	1	4.85	1	17.50
22	Pattukottai	1	10.78	1	4.85	1	17.50
23	Adirampattinam	1	12.84	1	10.70	2	31.46
24	Nannilam	1	16.42	0.4	5.78	1	15.47
25	Kodavasal	1	15.15	0.1	10.42	1	17.21
		224	333.81	18.4	218.27	26.3	410.74

APPENDIX—C—*cont.*

Serial number.	*Name of station.*	*April.*		*May.*		*June.*	
		Number of days.	*Rain fall.*	*Number of days.*	*Rainfall.*	*Number of days.*	*Railfall.*
(1)	(2)	(9)	(10)	(11)	(12)	(13)	(14)
1	Thanjavur	1	8.3	4	68.18	2	29.95
2	Thiruvayaru	1	1.82	2	52.82	2	47.03
3	Vallam	1	6.78	3	47.82	2	25.0
4	Thirukkapttupalli	1	9.24	3	68.4	2	24.02
5	Grand anicut	1	16.62	4	83.0	2	24.05
6	Papanasam	3	18.72	2	45.62	2	31.83
7	Valangaiman	1	23.58	3	44.99	2	26.58
8	Mannargudi	2	[21.96	2	45.35	4	45.48
9	Needamangalam	1	269.25	1	27.18	3	37.10
10	Thiruvarur	2	24.29	1	31.11	3	46.49
11	Nagapattinam	2	25.5	2	39.38	3	41.19
12	Thirupondi	1	25.5	2	24.89	3	43.84
13	Myladuthurai	0.4	11.51	1	44.56	2	37.74
14	Tranquebar	1	11.32	2	31.59	23.49	23.49
15	Sirkali	..	..	..	..	..	..
16	Neithavasal	0.2	10.48	2	19.68	3	58.37
17	Thiruthuraipoondi	2	21.11	3	50.89	2	24.70
18	Vedaranyam	..	..	..	..	..	..
19	Muthupet	2	40.03	2	47.79	1	22.08
20	Kumbakonam	..	..	..	..	..	..
21	Aduthurai	1	14.70	4	44.49	3	38.55
22	Pattukottai	2	26.69	3	46.58	2	33.50
23	Adirampattinam	2	34.08	4	62.12	3	33.37
24	Nannilam	3	17.12	2	27.48	2	34.54
25	Kodavasal	1	16.39	2	36.54	2	27.22
	Total ..	37.0	[689.25	61	1,201.86	63	881.08

APPENDIX—C—*cont.*

Serial number.	*Name of the Station.*	*July.*		*August.*		*September.*		*October.*	
		Number of days.	*Rainfall.*	*Number of days.*	*Rainfall.*	*Number of days.*	*Rainfall.*	*Number of days.*	*Rainfall.*
	(2)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)
1	Thanjavur	6	29.35	5	89.75	8	101.97	10	165.05
2	Thiruvayaru	3	64.98	3	108.88	6	86.47	8	144.62
3	Vallam	4	82.35	5	102.25	8	127.59	8	132.88
4	Thirukkattupalli	4	48.35	4	71.84	8	105.32	8	153.88
5	Grand anicut	4	63.66	4	71.12	7	117.06	10	148.52
6	Papanasam	6	65.5	6	158.22	6	110.86	9	162.48
7	Valangaiman	4	71.36	5	88.48	6	106.12	9	190.15
8	Mannargudi	5	69.23	5	79.05	7	109.28	11	222.02
9	Needamangalam	5	76.63	5	99.46	7	111.50	10	219.88
10	Thiruvarur	5	61.50	4	53.45	7	97.72	11	219.88
11	Nagapattinam	5	46.45	5	89.98	7	66.44	12	323.99
12	Thirupondi	3	45	16	62.84	5	131.23	10	224.78
13	Myladurhudai	6	70.84	6	66.14	6	116.73	7	189.06
14	Tranquebar	5	74.44	5	63.64	4	67.35	12	264.04
15	Sirkali	..	..	..	..	6	97.94	11	272.47
16	Neithavasal	4	40.86	5	69.83	4	67.35	7	189.06
17	Thiruthuraipoondi	4	57.77	4	78.73	8	83·20	12	264.04
18	Vedaranyam	..	..	..	..	6	87.94	11	272.47
19	Muthupet	4	69.9	4	47.5	7	117.36	11	239.07
20	Kumbakonam	..	..	..	..	8	112.58	11	219.52
21	Aduthurai	5	58.26	5	86.74	8	123.20	11	195.58
22	Pattukottai	5	78.28	5	137.46	6	110.07	11	187.20
23	Adirampattinam	5	69.58	6	99.58	7	145.92	12	265.85
24	Nannilam	4	51.08	5	81.95	5	85.84	10	230.76
25	Kodavasal	4	65.69	5	80.15	6	104.33	9	109.50
	Total ..	116	16,125.54	123	2,074.64	164	2,620.39	255	5,247.67

APPENDIX I-C.—*cont.*

Serial number.	*Name of station.*	*November.*		*December.*		*Total.*		*Remarks.*
		Number of days.	*Rainfall.*	*Number of days.*	*Rainfall.*	*Number of days.*	*Rainfall.*	
(1)	(2)	(23)	(24)	(25)	(26)	(27)	(28)	(29)
1	Thanjavur	10	158.94	77	108.35	5.47	856.23	The average rainfall in this statement is furnished for the period from 1970 to 1982. But the average number of rainy days are for the period from 1973–82.To average number of rainy days for the period from 1970 to 1972 is not available.
2	Thiruvaiyaru	8	155.39	5	90.12	39.7	793.25	
3	Vallam	8	133.62	6	114.32	46.6	793.50	
4	Thirukattupalli	8	127.65	6	84.02	45.7	712.21	
5	Grand anicut	9	109.71	5	74.72	47.5	728.56	
6	Papanasam	9	217.43	6	110.45	50.4	945.58	
7	Valangaiman	8	242.96	6	228.52	44.9	1,055.18	
8	Mannargudi	10	213.92	8	169.78	57.0	1,010.29	
9	Needamangalam	11	292.97	7	161.13	51.0	1,214.16	
10	Thiruvarur	11	292197	8	213.36	56.0	1,071.23	
11	Nagapattinam	12	312.01	10	226.78	60.0	1,178.26	
12	Thirupondi	11	316.82		165.69	45.8	940.64	
13	Myladuthudai	11	279.24	8	211.68	58.0	1,217.10	
14	Tranquebar	8	268.72	8	217.23	51.04	1,209.20	
		12	268.72					
15	Sirkali	13	378.19	8	199.09	57.0	1,147.22	
16	Neithavasal	8	279.24	6	240.89	43.2	1,007.81	
17	Thiruthuraipoondi	12	268.72	9	210.61	63.0	1,108.08	
18	Vedaranyam	13	378.19	10	272.86	58.4	1,295.22	
19	Muthupet	8	248.52	8	167.21	52.0	1,043.76	
				9	147.09	58.4	1,092.32	
20	Kumbakonam	11	240.42	6	168.34	62.0	1,017.93	
21	Aduthurai	12	248.42	8	139.31	52.0	983.47	
22	Pattukottai	9	191.13	8	209.54	52.4	1,147.50	
23	Adirampattinam	11	228.82	7	163.45	49.0	1,000. 3	
24	Nannilam	11	286.82	..	..	..	..	
25	Kodavasal	9	249.48	..	..	..	..	
	Total ..	248	6,067.15	185	4,247.62	1,319.01	25,632.02	

APPENDIX I. D.

STATEMENT SHOWING THE NORMAL RAINFALL IN MM. FOR EACH RAIN GUAGE STATION IN THE DISTRICT OF THANJAVUR.

Taluk.	*Station.*	*January.*	*February.*	*March.*	*April.*	*May.*	*June.*	*July.*	*August.*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10
Sirkali	Sirkali	79.8	24.6	19.1	26.9	43.7	29.7	49.8	114 1
	Neivasal	68.3	22.6	19.8	29.5	38.1	26.9	39.1	95.8
Mayavaram	Tranquebar	64.8	20.8	21.1	33.3	42.9	25.1	39.6	73.7
	Mayavaram	76.2	21.3	19.1	34	62	32.3	35.1	104.4
Kumbakonam ..	Kumbakonam ..	61.7	14.	17.8	32.8	62.5	45.7	50.3	105.9
Papanasam	Papanasam	59.4	16.3	21.1	39.4	59.2	39.6	49.5	99.6
	Valangaiman	58.7	15.7	19.8	37.1	65.8	37.6	48.3	104.4
Nannilam	Kodavasal	70.9	15.	20.1	39.4	59.4	29.	48.8	89.1
	Nannilam	74.9	19.1	21.6	36.6	56.1	32.3	44.5	86.6
Thiruvarur	Thiruvarur	78.7	25.1	25.1	37.1	55.4	32.3	39.1	69.3
Nagapattinam ..	Nagapattinam ..	82.8	24.9	24.1	32.8	44.5	27.4	42.4	80.5
	Thirupoondi	90.7	23.1	27.7	46.7	60.5	25.1	41.1	73.1
Vedaranyam	Vedaranyam	102.4	26.7	24.4	42.2	43.4	31	43.4	87.6
Thiruthuraipoondi ..	Thiruthuraipoondi ..	73.4	17.5	20.3	56.9	51.8	32.3	47.2	90.9
	Muthupet	68.6	25.1	24.4	51.8	53.3	40.6	53.9	114.1
Mannargudi	Mannargudi	63.0	17.5	19.1	39.4	53.3	38.1	57.1	107.2
Needamangalam ..	Needamangalam ..	57.9	15.7	18.	30.7	57.1	39.9	43.9	102.6
Thiruvaiyaru	Thiruvaiyaru	49.8	15.7	12.9	39.9	60.37	38.3	39.1	110.7
	Thirukattupalli ..	40.6	14.	15.7	35.6	67.8	47.	54.5	132.8
Thanjavur	Vallam	52.8	15.2	17.5	47.5	74.2	30.2	35.6	99.1
	Grand Anicut ..	24.9	17.8	17.3	35.6	55.6	41.	48.	108.2
	Thanjavur	58.1	13.5	16.8	51.8	53.5	27.9	69.3	88.4
Pattukottai	Adirampattinam ..	62	20.1	22.9	45.7	48.5	38.6	60.7	101.1
	Pattukottai	59.2	17.	24.1	..	..	..	..	..
		1,576.6	458.3	489.8	934.7	1,318.1	820.3	1,133.7	2,340.5
	District average ..	**65.7**	**19.1**	**20.5**	**38.9**	54.9	34.2	47.2	97.5

Taluk.	*Station.*	*September.*	*October.*	*November.*	*December.*	*Annual total.*
(1)	(2)	(11)	(12)	(13)	(14)	(15)
Sirkali	Sirkali	109.7	257.8	422.1	212.6	1,389.9
	Neivasal	100.6	257.1	433.1	206.5	1,337.4
Mayavaram	Tranquebar	87.6	252.5	408.2	215.1	1,280.2
	Mayavaram	99.8	232.2	389.6	184.4	1,294.9
Kumbakonam ..	Kumbakonam ..	126.5	178.1	264.4	141.7	1,101.4
Papanasam	Papanasam	104.5	184.7	248.4	124.5	1,046.6
	Valangaiman	116.6	179.6	268.7	134.9	1,087.2
Nannilam	Kodavasal	119.1	195.8	303.0	169.2	1,183.9
	Nannilam	107.9	206.0	361.7	201.2	1,252.0
Thiruvarur	Thiruvarur	95.8	204.7	364.2	203.2	1,253.2
Nagapattinam ..	Nagapattinam ..	84.1	241.8	450.3	242.1	1,367.0
	Thiruthuraipoondi ..	90.9	254.0	447.5	253.5	1,414.2
Vedaranyam	Vedaranyam	105.4	269.5	494.5	263.7	1,533.1
Thiruthuraipoondi ..	Thiruthuraipoondi ..	101.1	204.7	337.8	197.1	1,199.5
	Muthupet	125.2	203.2	287.5	183.4	1,196.5
Mannargudi	Mannargudi	122.4	177.0	270.3	163.6	1,146.8
Needamangalam ..	Needamangalam ..	115.3	167.6	270.1	156.2	1,096.8
Thiruvaiyaru	Thiruvaiyaru	110.7	172.5	192.8	108.2	936.8
	Thirukattupalli	117.9	163.6	177.2	87.4	905.2
Thanjavur	Vallam	141.5	164.9	184.4	109.2	1,023.3
	Grand Anicut ..	103.1	178.6	158.2	73.1	859.6
	Thanjavur	132.3	156.6	197.9	109.0	969.9
Pattukottai	Adirampattinam ..	112.0	192.5	258.6	143.5	1,102.3
	Pattukottai	106.2	180.3	234.7	151.1	1,067.2
	District average ..	2,636.6	4,875.2	7,426.2	4,034.9	28,044.9
		109.8	203.1	309.4	168.1	1,168.4

The rainfall normals for Aduthurai rain guage station is not furnished in this statement as it is not available.

APPENDIX II.

RIGHTS AND CONCESSION ADMITTED IN THE RESERVE FOREST IN THANJAVUR FOREST DIVISION.

THALANAYAR RESERVED FOREST.

Notification number—Chief Conservator of Forest's Ref. No. 152/50, *dated* 8*th April* 1950.)

In exercise of the powers delegated under section 16 of the Madras Forest Act, 1882 (The Madras Act V of 1882), the Chief Conservator of Forests, Madras hereby grants a right of way over the foot and cattle path from Avarikadu to Vandal as described in detail in the Schedule within Talanayar reserved forests in Thiruthuraipoondi taluk, Thanjavur district, subject to the condition that the right hereby granted shall be liable for cancellation at the discretion of the Chief Conservator of Forests in case of misuse or for other reasons.

SCHEDULE.

Foot and cattle path from Avarikadu to Vandal open to a width of four yards and to a total distance twenty chains for men and cattle.

Description.—It enters the reserve on the mouth side of S. No. 53 of Avarikadu village at a Point 60 links east of its north-west corner runs for a distance of 400 links at a bearing of 355 and leaves the reserve on the south side of S. No. 325/1-2 of Talanayar III Sethi village at a point 1,542 links east of its south-west corner.

KODIAKADU RESERVED FOREST.

(*Notification No.* 188, *dated* 4*th May* 1952.)

The under mentioned paths are admitted and recorded within the reserve Path Nos. 1, 2 ,3 and 4 are cart tracks open for men cattle and carts. Path Nos. 1, 2 and 3 to a width of 6 yards Path No. IV to a width of 3 yards. Path Nos. 5 to 10 are foot paths for men and cattle only. Path Nos. 5 to 7 a width of 11 yards and 8 to 10 a width of 3 yards.

Cart Track No. 1.—From cart track No. 2 (described below) to Servaya Iyenarkoil. It branches from the former at a point about chain from Post No. 22 on the west boundary of the reserve and running east-south east through the reserve leaves it on the west side of the said koil. This cart track is also known as " Onathimikulam cart track ".

Cart Track No. 2.—From Kodiakadu to Vedaranyam enters the reserve on its west boundary at post No. 22 eight chains south-west leaves it at post No. 19 about 24 chains north north-east of Kollapaanickam mantapam again enters the reserve for the third time at post No. 16 about 44 chains south-south-west of the above mentioned mantapam and running south west through the reserve leaves it finally at post No. 12 five chains east of post No. 13. This cart track is also known as the Kodiakadu-Nagapattinam cart track.

Cart Track No. 3.—From Kodiakadu to Serveya Iyenarkoil enter the reserve on its west boundary at Post No. 10 about 52 chains north of post No. 8 and running north easternly through the reserve joins cart track No. 1 at a post about 25 chains west of the said Koil. This path is also known as Perallam Nallattanni Pallam cart track.

Cart Track No. 4.—From Amirthagudeswamy koil to Point calimore entres the reserve on its west boundary at post No. 942 chains north of post No. 8 and running easternly leaves the reserves at post No. 5 about 7 chains south west of post No. 4.

Foot Path No. 5.—From cart track No. 2 to Ramaswamipatham branches from the former at a point about 90 chains south of post No. 20 and runs east and north to the said patham. Its distance is a 2 chains and 25 links.

Foot Path No. 6.—From cart track No. 2 to Modimantapam, branches from the former at a Point above 17 chains from post No. 20 and runs south-eastwards to the Mantapam. Its distance is 9 chains and 25 links.

Foot Path No. 7.—From Ramaswamipatham to Modimantapam runs in a south easterly direction from the former to the latter.

Foot Path No. 8.—From Kodiakadu to Periapalayamkolam enters the (Reserve on its west boundary at Post No. 15 about 8 chains 10 links north-west of the boundary stone at Post No. 13 and runs north-west to the Kulam for 6 chains.

Foot Path No. 9.—From Kodiakadu to Chinnapalayakulam enters the reserve on its west boundary 14 about 4 1/5 chains from Post No. 13 and runs northerly to the said Kulam for 2 chains and 32 links.

Foot Path No. 10.—From Kodiakadu to Chinnapalayamkolam enters the reserve on its west boundary at Post 14 about No. 4 1/5 chains from Post No. 13 and runs northerly to the said Kolam for 2 chains and 32 links.

Foot Path No. 11.—From the junction of cart track Nos. 1 and 3 to the patta land (iii) inside the reserve. It runs in a north-easterly direction entering the enclosures on its southern side. Its distance is 6 chains.

The under mentioned places are demarcated out of reservation and retained as enclosures for the use of worshippers :—

(1) The Servaraya Iyernarkoil situated 19 chains west of the eastern boundary and 72 chains south of the north boundary of the reserve with a space of 3 chains length all round. It is approached from Kodiakadu by card No. 3, and from Vedaranyam and Agasthiampalli villages by card track No. 1.

(2) A stone mantapam called Ramaswamipatham about 2 chains east of cart track No. 2 with a space of 11 years all round is approach by food path No. 5.

(3) Modimantapam an old stone building about 300 yards south-east of Ramaswamipatham with a space of 3 chains length all round is approached by food paths No. 6 and 7. The right to bring the Vedaranyam and Sengulaswamies to the mantapam and burn lights, torches and fire works on the occasion is admitted.

(4) The bank of a Pond called Avilaikolam some three hundred yards west south of Modimantapam with a space of 11 yards round it is approached from cart track No. 2. A block 28 acres containing 6 patches of Kattukuttayaipatta land in which was excluded from the Forest and treated as an enclosures and is approached by path No 10 supra which branches at the junction of the cart tracks No. 1 and 3 and running in a north easterly direction enters the enclosures on its southern side has been acquired as per land acquisition orders No. 6/89, dated 16th December 1959.

Kattur Reserved Forest.

Rights admitted.—(1) Pathway at 20 links (4 meters) width and 55 links (11 meters) length on the southern side of the Forest block 30 links (6 meters) west from the trijunction point of S.F. Nos. 2, 4 and 5 connecting the patta land in S.F. No. 2/2 across the forest block in S.F. No. 2/1 is admitted.

2. Right of way to fly beats through the Uppanar channel which runs across the forest block is admiited.

3. Patta land measuring 1.80 acres (0.73) hectares is held as enclosures.

Published in Part II—Section 2 of the *Tamil Nadu Government Gazette*, dated the 2nd April 1980 at page 205.

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GOPALASAMUDRAM RESERVED FOREST.

Rights admitted.—(1) Right is allowed to the public to use the burial-*cum*-burning ground in the western end of the forest block measuring 50 cents and to use the pathway connecting the burial-*cum*-burning ground in twenty links width crossing Sodhiakudi village limits at 230 and 250 links north of the trijunction point of S.F. Nos. 2 and 10 of the Gopalasamudram village and Sodiakudi village limits intended for the use of the villagers of Sodiakudi. Somakudi Padugai K. Prismatic compass bearing and distance :—

Station number.	*Bearing number.*	*Distance.*
(1)	(2)	(3)
	DEGREES.	LINKS.
1	30	700
2	30	100
3	90	500
4	27	100
5	36	500

2. Right is allowed to the public to use the burial-*cum*-burning ground in the middle or forest block measuring 60 cents and to use the pathway connecting it in twenty links for the use of villagers of Saraswathi with the following Prismatic compass bearing and distance.

Station number.	*Bearing number.*	*Distance.*
(1)	(2)	(3)
	DEGREES.	LINKS.
6	352.30	147
7	338.30	227
8	40	850
9	40	400
10	130	200
11	220	400
12	310	200

3. Right is allowed to the public to use the mud road in 201 links width running east to west connecting the main road and the villagers of Sodhiyakkudi, Madirvelar, Vedaranyam, Elathyur and Agaram, Elathur lying the west with the following Prismatic compass bearing and distance:—

Station number.	*Bearing number.*	*Distance.*
(1)	(2)	(3)
	DEGREES.	LINKS.
13	44.30	450
14	44	480
15	39	820
16	53	570
17	42	224
18	47.30	995
19	39	120
20	26	315
21	45	469
22	61	325
23	55	700
24	57.30	600
		6 068 *or*
		1,200 Metres.

4. Right is allowed to the Public to use the burial-*cum*-burning ground measuring 64 cents and pathways in twenty links width towards north from the south bank of Coleroon included for use of the villages of Kollidam, Melvalam as Samigan with the following prismatic compass bearing and distance:—

Station number.	*Bearing number.*	*Distance.*
(1)	(2)	(3)
	DEGREES.	LINKS.
24	344.30′	447
25	329	171
26	243	150
27	332	180
28	63	350
29	152	180
30	243	200

5. Right is allowed to the public to use tne cart-track runs on the southern bank of the Coleroon river to Alakudi towards east and to Sodiyakudi towards west from the main road with the following prismatic compass bearing and distance:—

Station number.	*Bearing number.*	*Distance.*
(1)	(2)	(3)
	DEGREES.	LINKS.
31	25	345
32	32.30′	160
33	51	148
34	65.30′	98
35	55	390
36	34.30′	362
37	34	524
38	51	524
		2,551 or 505 metres.

6. Right is allowed to the existance of a terraced building abuting in the western side of high way road used as checkpost by the Panchayat Union in an extent of 1 cents with the following prismatic compass bearing and distance:—

Station number.	*Bearing number.*	*Distance.*
(1)	(2)	(3)
	DEGREES.	LINKS.
34	330	72
35	330	50
36	90	30
37	180	40
38	270	30

7. Right is allowed to public to worship and maintain one Pillayarkoil abuting in the eastern side of the highways road in an extent of 750 sq. links with the following prismatic compass bearing and distance :—

Station number.	*Bearing number.*	*Distance.*
(1)	(2)	(3)
	DEGREES.	LINKS.
39	310	40
40	325	30
42	52,30′	25
43	235	25

8. Right is allowed to the existance of a fish market with thatched rooffing in an extent of nearly three cents used by the Coleroon Panchayat Union with the following prismatic compass bearing and distance :—

Station number.	*Bearing number.*	*Distance.*
(1)	(2)	(3)
	DEGREES.	LINKS.
39	127-30	40
44	72-30	40
45	158-30	70
46	246	40
47	144	70

9. River Coleroon runs in the northern portion of the forest block whichis under the control and maintenance of the Public Works Department.

10. Alinyar drainage channel runs in a portion of the forest block in the southern side and join the main river Coleroon after passing through land in R.S. No. 105 of Gopalasamudram village.

11. Drainage channel in R.S. No. 32/C.3 and Melvurallan channel in R.S. No. 29 runs south to north and drains in main river Coleroon.

12. Highways road on the bridge across river Coleroon runs north to south at a width of 50 links in the eastern portion of the Forest Block with the following prismatic compass survey bearing and distance:—

Station number.	*Bearing number.*	*Distance.*
(1)	(2)	(3)
	DEGREES.	LINKS.
51	328.30′	65
52	329	530
53	3,300	River belt.

(Sd.)

Deputy Secretary to Government.

PUDUPATTINAM BIT-I

Heights admitted (Area 282.89 hectares) :

1. Right is allowed to the public for use of the foot-path in the northern end of the Reserve Forests in ten links width. It stands from S.F. No. 59B at 400 links south of the trijunction point of S.O. No. 594, 59B and 338 and runs west to east connecting fishing market complex called as Annanagar. It crosses the Buckingham channel for which ferry service is available. The foot-path runs with the following prismatic compass bearing and distance with the following prismatic compass bearing and distance:—

Station number.	*Bearing number.*	*Distance.*
(1)	(2)	(3)
	DEGREES.	LINKS.
1	100	300
2	100	300
3	100	400

2. Right is allowed to the public for use of the gravel road connecting Pudupattinam with Playar fisherman colony which runs west to east crossing Buckingham canal for which ferry service is available. The road with a width of 50 links runs with the following prismatic compass bearing and distance:—

Station number.	*Bearing number.*	*Distance.*
(1)	(2)	(3)
	DEGREES.	LINKS.
4	96	45
5	64	521
6	70	300
7	70	500
8	70	500
9	70	1,300
		3,166 or 627 metres.

3. Rights is allowed to the public to go and worship the deity in the temple called as Kattalaya-koil which is partly terraced and partly tiled which is situated in the middle of the forest block. A path way in the ten links width stands from S. No. 340 and runs towards south, east and reaches the temple with the following prismatic compass bearing and distance:—

Station number.	*Bearing number.*	*Distance.*
(1)	(2)	(3)
	DEGREES.	LINKS.
10	140	389
11	85	80
12	85	15
13	175	30
14	265	16
15	355	30

4. Right is allowed to the public for the use of the gravel road connecting Pudupattinam village with Madvamadu fisherman colony. It starts from trijunction point of S.Nos. 331, 332 and 340 and runs towards south-east with a width of 50 links. It crosses the Buckingham canal for which a pucca bridge has been constructed by the department. The road runs in the following prismatic compass bearing and distance :—

Station number.	*Bearing number.*	*Distance.*
(1)	(2)	(3)
	DEGREES.	LINKS.
16	115	98
17	443	143
18	12.130′	545
19	147	652
20	94	810
21	67	484
22	86	200
		2,932 or 580 metres.

5. Right is allowed to the public for using the thrashing floor and burial ground in 13 cents in the western bank of Buckingham canal touching the eastern boundary of S.No. 87B of 88. Thandavankulam village. Northern half is used as burial ground and the southern half is used as thrashing floor with the following prismatic compass bearing distance:—

Station number.	*Bearing number.*	*Distance.*
(1)	(2)	(3)
	DEGREES.	LINKS.
23	195	254
24	105	50
25	130.30′	250
26	85	50

6. Right is allowed to use the public for using the burial ground in 5 cents on the western bank of Buckingham canal touching the eastern boundary prismatic compass bearing and distance :-

Station number.	*Bearing number.*	*Distance.*
(1)	(2)	(3)
	DEGREES.	LINKS.
27	192	100
28	285.30	50
29	19	100
30	111	50

7. Rights is allowed to the agriculturists to use the thrasing floor in 19 cents in the eastern bank of Backingham canal touching to western boundary S. No. 27 of 38. Thandavankulam village with the following prismatic compass bearing and distance.

Station number.	Bearing.	Distance.
(1)	(2)	(3)
	DEGREES.	LINKS.
30	276	30
32	214	380
33	110	70
34	24½	380

8. Rights is allowed to the agriculturists to use the thrasing floor in 7 cents in the eatern bank of Buckingham canal touching the western boundary of S. No. 10 and 38. Thandavankulam village the following prismatic compass bearing and distance.

Station number.	Bearing.	Distance.
(1)	(2)	(3)
	DEGREES.	LINKS.
38	284.30′	50
36	196	133
36	108	50
37	24	133

9. Right is allowed to the agriculturists for using the thrasing floor in 5 cents the eastern bank of Buckingham canal touching the S.F. No. 13 of Thandavankulam village with the following prismatic bearing and distance.

South with 100 degree WBC and joins southern boundary of the block which is also north-eastern corner of S.F. No. 30 of said Mudalaimadu village. Thence the boundary runs generally towards west along the northern sides fo S.F. Nos. 30 and 28 eastern sides of S.F. Nos. 35/3 and 35/c all of the sad Mudalai madu village to the starting point.

(Sd.) ———,
Additional Secretary to Government.

Alakkudi R.F.

Area of the Block 452.20AC. 183.00

Rights admitted .. .. Nil. Nil.

Naravakadu.

Thamarakottai R.F.

Rights admitted .. .. Nil.

Vadakadu.

Rights admitted .. .. Nil.

Pudupattinam R.F.

Area 110.29 acres or 44.63 hectares rights and concessions are not yet published.

Udayamarthandapuram R.F.

Rights admitted .. .. Nil.

Nagavelli R.F.

Rights admitted .. .. Nil.

Thurakadu.

Rights admitted.

Kodaiampalayam R.F.

Avanam R.F. .. ..

Pudupattinam Bit II R.F. .. .. Nil.

Sadiakudi R.F. .. .. Nil.

Rights admitted. .. .. Nil.

APPENDIX III-A.

LIST OF THREE SHRUBS AND HERBS COMMONLY FOUND IN THANJAVUR FOREST DIVISION.

Serial number. (1)	*Botanical name.* (2)	*Tamil name.* (3)
1	Acacia erabica	Karuvelan.
2	Acacia for uginea	Perambal.
3	Acacia leucuephelea	Velvelan.
4	Acacia latronum	Koradai.
5	Acacia sundra	Karungali
6	Acacia insia	Indu.
7	Acacia senegal	....
8	Acacia planifrons	Kodivelan.
9	Acacia pennate	Vellai Indu (Kattusikai).
10	Acanthis ilicifolisu	Majakadambal.
11	Adina cordifolia	Majakadambai.
13A	Aegocroas corniculatus	Harikandan.
14	Akangium lamarckii	Alingi.
15	Ailanthus excelsa	Pimaram.
16	Albezzia lebback	Usil.
17	Albezzia amara	Usil.
18	Albezi oderatissima	Karivagai.
19	Alangium selvifolius	Alingi.
20	Alysicarpus Lontier	....
21	Anaerdium occidentale	Mundiri.
22	Asppagus racemosus	Manikudukal.
23	Altanita monophylla	Kattuellumchai.
24	Avincennia officinalis	Alayathi.
25	Avincennai alba	Alayathi.
27	Avicennia nerina	Venkandan.
28	Azma terteacentha	Sengucheri.
29	Balleria prionitis	Kattukanakambram.
30	Barloria acumina	....
31	Biophutum sansitnum	....

Serial number.	Botanical name.	Tamil name.
(1)	(2)	(3)
32	Blopharis bofrahanviaefolia	....
33	Berreria articularia	....
34	Brugucericeas cylindra	....
35	Calophyllum inophyllum	Pinnai.
36	Cassia fiatula	Konnai.
37	Cassiatora	Thagari
38	Cassia Koliji	....
39	Cassia accidentalis	Ponavarai.
40	Cassia auriculata	Avaram.
41	Cassia auriculata	Kilaka.
45	Calotrophs gagantea	Eruku.
46	Capparis sepicarai	Thoratti.
47	Cartave relicfosa	....
49	Cerieps rozburriaana	Chiru kandal.
50	Clhorozylon switenia	Porasux.
51	Clerreddenursm serratum	Cheruthakku.
52	Clistanthus cellinu	Uduvan.
53	Commiphera caudada	Kilurai
54	Commpher berryi	Kukivai.
55	Cordia monocia	Narivelli.
56	Cressa crotica	....
57	Cyrocarpus jacquinn	Thankkuu.
59	Dicermadiarticulatu	....
61	Dedneaa viscosa	Virali.
62	Eleedondren glaucum	Veerai.
63	Emblic efficinalis	Nelli.
64	Eruthrozylon temenetesam	Sembulichan.
65	Exceoeria agallocha	Thillai.
66	Ficus retuse	Ichi.
67	Ficus beneglensis	Alai.
68	Ficus gibbose	Athi.
69	Flacurtia indica	Kattukala.
71	Glycosmis chechihenea	Bhoothalai.
72	Gre ia hirusta	Thaadasu.
73	Gyrocarpus jacquianii	Vellai thankakau.
74	Gymnosperia emarginata	Kattari.
75	Helicteres Isora	elambiri.
77	Holarrhena antidysentyica	Veppalai.
78	Indigegera tincotnia	Nili.
79	Inga dulies.	Kodupapuli.
80	Iondium sufferruticosu	....
81	Isonannadre Laneslate	....
86	Justice dffusa	....
87	Lannea coromandelica	Odayamnaram.
88	Launata pinnatifide	Puchedi-arippa.
89	Leucas aspera	Thumbai.
90	Lepisanthes teraphylla	Ruhmathi.
91	Mumnitzera racemesa	Thiruthrutti.
93	Manilkara litteralis	....

Serial number.	*Botanical name.*	*Tamil name.*
(1)	(2)	(3)
94	Manikara elangi	Magilam.
95	Marremia tridentata	....
96	Mbabugifolia	Kattuthovarai
97	Memcylon umbellatum	....
98	Memyclon edule	Kasan.
99	Mimes pudica	Thottunsuniki.
100	Morinda tinctoria	Nona.
101	Melluge disticha	....
102	Mollugue mudicaulis	....
103	Mollugue cervina	....
105	Odina wedlier	Odayamaram.
106	Oldenlandia umble ata	Saya.
107	Opuntia dillenii	Chappathi Kalli.
108	Pavetta indica	Pavetta.
109	Parkinsenia auuleata	Chembu kuruvai.
110	Pavonia zeylanica	Karundotti.
111	Phyllanthus simpe	Killanelli.
112	Phascolus trilovus	Panipayir.
113	Phoenix acaulis	Ican.
114	Pengamis Pinnata	Pengam.
115	Polygala chniensis	....
116	Polycersea corymbosa	....
117	Putraniv rezburghii	Parupala.
118	Prosop's julifora	Volikathan.
119	Rhizeri candelarai	Kandal.
120	Rhizepheri mucronata	Kondal.
121	Salvera indica	Opa.
134	Salicurina laucteta	....
125	Securine laucteats	....
126	Sida cordifolia	....
127	Siderexylon tementossam	Pzlai.
128	Solanum nubescens	Ana sundekai.
130	Strebulus asper	Pura pirasu.
131	Supremceca h sp'da	Nutti chorri.
132	Saueda meritima	....
133	Suaeda meritima	....
134	Syszugium cumini	Navalmaram.
135	Tamaridum indica	Puliamaram.
136	Tephresia purpurea	Kolini.
137	Thespesia peiolena	Poovarasu.
138	Tribulus terrestris	Nerinji mullu.
139	Trichodesma indicum	....
140	Treme orientalis	Amparuthi.
141	Vitz altissma	Myaladi.
142	Vitex negudne	Nochi.
143	Waltheria indica	..
144	Wrightia tinctoria	Palai.
145	Zizypus jujuda	Elandai.
146	Zizyphys zyleprus	Kottai alandai.
147	Zizypus rugesa	Kailandai.

APPENDIX III B.

CLIMBERS.

Serial number. (1)	*Botanical name.* (2)	*Tamil name.* (3)
1	Anrus precatoius	Kundumani.
2	Acacia intsia	Indumullu.
3	Asperamus racemousus	Kodumulam.
4	Cassytha fillifemis ..	....
5	Cephandra indica	Kovey.
6	Cissus daudrangularis	Pirandis.
7	Cissameskis cibvictulacea	....
8	Comborthum Latifolum	....
9	Cuculus nistutus	....
10	Dalber trifolita	Tekil.
11	Darris scandens	Tekil.
12	Darris scandens	Manneri.
13	Hemidesmus indicus	Conankodı.
14	Ipomea bilobia	Megamali.
15	Jasminimum arborescens	....
16	Laptadenia reticulata	....
17	Pterrolobium indicum	....
18	Tinesperioj corndifolou	Chenkodi
19	Vitis cornosa	....
20	Zizypus ocenenplia	Sooraimullu.

APPENDIX III C.

GRASS.

1	Artisitd hysitrix	PPsipullu.
2	Aristida depressa	Do.
3	Aristide byotrex	Do.
4	Cenchrus ciliaris	Kolukattaipullu.
5	Cynodepen dectylon	....
6	Oyperys arenarious	....
7	Cyperus differmis	....
8	Cymborne on coloratus	....
9	Eragrestis tremula	Seranipullu.
10	Elosione indica	....
11	Fimbristylis pelytrichoides	Cosipullu.
12	Heterophogb controtus	Do.
13	Import at cylindrica	....
14	Spinfic scuersusus	Ravanthadi
15	Spinfix littereus	....
16	Themeda triandra	....

APPENDIX III-D.

NAMALIA.

Black buck or Indian antelope	Antilope cerricarna.
Bonnet macque	Macaca radiata.
Black maped hare or India hare	Lapur aigricollis.
Chital or spootted deer	Axix Axix.

Serial number. (1)	Botanical name. (2)	Tamil name. (3)

APPENDIX III D—*cont.*

Namalia—*cont.*

	Common mangoose	Harnestes edwardi.
	Fruit bat	Cynopterus sphiax
	Jackal	Canis aureus.
	Small Indian Mangoose	Harpestes auropunctatus.
	Wild bear	Sus scorfa.
	Wild god	Cusa alpas.

APPENDIX III (E).

Raptilia.

1	Brown speckled whipe snake	Dryophis Puliveruleatus.
2	Bridal snake	Dryocalamus ayampha.
3	Carpet snake	Morelia variegata.
4	Common water snake (Dhamam)	Zomesi nucusus.
5	Common green whip snake	Dryophis mycterizans.
6	Common Wold snake	Lycodon aullucus.
7	Common pond snake (Keel Back)	Tropidonotus Piscater.
8	Common riat	Bungarus caer, leas.
9	Common India Coral snake	Membibuagaursaligresceas.
10	Cobra	Main tripudians.
11	Chainviper	Vipera spp.

APPENDIX III (F).

Birds.

1	Ashy wren Warbler	Prinia socialis.
2	Ashyswallow shrike	Artamus Fuscus.
3	Ashby Drongo	Decrurus caeulescens.
4	Avocet	Rocuryirostra Avestratta.
5	Bay backed shrike	Lanius Vittatus.
6	Bar headed goose	Ancer indicus.
7	Bar tailed godwit	Limosa lappnica.
8	Billed Kingisher	Dicrurus adsimilis.
9	Black drongo	Diccruruns adsimilis.
10	Blackwinged kite	Elanus eaeruleus.
11	Blossom headed parakeet	Paittacula columbodies
12	Blue Winged parakeet	Psittacula columbodies.
13	Blue rock pegion	Columbia liviagmelin.
14	Black headed shrike	Coracina melangoptera.
15	Black headed gull	Larus ridibundus.
16	Black tiled gadait.	Limosa limosa.
17	Black winged stilt	Himantopus himatopus.
18	Black bellied tern	Sterna acuticauda.
19	Black bellied finchlark	Eremophterizgrisea
20	Born wol	Tyte alba.
21	Brahmainy myna	Sturuns pagedarum.
22	Brahminy kite	Haliszsture indus.
23	Brown fish owl	Bubo zeylonesis.
24	Broad billed sandpiper	Linicela feslinellus.
25	Bush lark	Mirsfra assreica.

Sl. No. (1)	Botanical name. (2)	Tamil name. (3)

APPENDIX III (7)—*cont.*

BIRDS—cont.

26	Button quail.	Turniz tank.
27	Caspion tera	Hydrpprogne caspin.
28	Cattle egret	Babulcus ibis.
29	Chest nut bellied nuthatich	Sittu castanea.
30	Chestnut headed bee eater	Merops leschenaulti.
31	Chestnut bittern	Izobrychus cinnamomeus
32	Common myna	Acridentheres tristis.
33	Common babler	Turdeides caudatus.
34	Common green been eater	Mereps orientalis.
35	Common Indian night jar	Caprimulgus asiaticus.
36	Common waver bird (Baya)	Placeus Phillipeus.
37	Common Kinfisher	Alcedeatthis.
38	Common teal	Anas crecc
39	Cotton teak	Nettepus coremandeliqnus.
40	Crow pheasent	Centrenus sinesis
41	Crested serpent eggle	Spilernis cheela.
42	Crested lark	Galeride crstata.
43	Curlew sandpiper	Calidris testacccus.
44	Dabchick	Fediceps ruficollis
45	Dantor (Snake bird)	Anhinga melanogaster.
46	Dulin	Erolia alpina.
47	Dull green leaf warbler	Phylliescopus prochelsi deavird slanus.
48	Eatern golden plover	Pluvialis dominica
49	Fan tail slipe	Capellagallinage.
50	Falamingo	Phoeni copterus roseus
51	Gargany teal	Anas strepera.
52	Gadwall	Anas querquedula.
53	Golden plover	Pluvialis dominica.
54	Golden backed woodpacker	Bracypternus beaghalensis.
55	Grey beaded myna	Sturnia malbarica.
56	Grey jungle fowl	Gellus sone ratii.
57	Grey horn bill	Tockus birostris
58	Great horned owl	Bubo bubi.
60	Greay shrike	Lani execubitor.
61	Green pigon	Treron phnenicoptera.
62	Grey patridge	Eraco linus pondicerianus
63	Grey Wagtail	Metacilla cinera.
64	Grey tit	Marus major
65	Greater backheaded gull	Larus inchtyeaetus.
66	Gray pelican	Pelecanus philippensis.
67	Grey plover	Pluvialis squatar ua.
68	Great stone plover	Eascusrecurviotris.
70	Green shank	Triga Thebulaica.
71	Green billed malkoha	Rhopodytes viridirestris
72	Gull billed tera	Gelochelidon nilotica.
73	Hwk cockoo (Brain fever bird)	Deculus varius
74	House crow	Carvus spelndens
75	Roopoe	Upupa epops

Serial number.	*Botanical name.*	*Tamil name.*
(1)	(2)	(3)
76.	House swift	Apus affinsii.
78.	Indian pitta	Pitta brachyrura.
79.	India pipit	Anthus rufulus.
80.	Indian robin	Sazicelodique fulicata
81.	India roller (Blue jey)	Coracias bengalensis.
82.	Indian roof hereon	Egretta gularis.
83.	India tree toed king vulture	Torgos calvus.
84.	Indian moorhen	Gallinula Chloropus.
85.	India cuckoo	Coculus micrepterus.
86.	Indian courser	Cureseius coromandli us.
87.	Iore	Aegithina tiphica.
88.	Jack snip	Lymnocryptes minimus.
89.	Jungle mya	Acridopheres fuscus.
90.	Jungle crow	Carvus macrorhyackos.
91.	Jungle babler	Turdeidesstraitus.
92.	Kestrel	Falco tinnunclus.
93.	King viture	Toggos calvus.
94.	Kentish plover	Charadrius alexandrinus.
95.	Koel	Eudy namis sclopacus.
96.	Knot	Galidris canutus canutus.
97.	Large green bea eater	Merops orientalis Ceylomicus.
98.	Large peied wagrail	Metacilla mederaspatensis.
99.	Large sand plover	Charadrine tescheneavli.
100.	Lesser black headed gull	Larus ricipundus.
102.	Little brown dover	Strepo pelia senegaliensis.
103.	Little coromraont	Phalacrocoraniger.
104.	Litter tern	Sterna albifrons sinensis
105.	Little stint	Calidris mniutus.
106.	Marshsand piper	Dringa hypoleucos.
108.	Magpie robin	Copysywnus solaris.
109.	Open billed stork	Anastomis oscitans.
110.	Night heron	Nyctocorax nycto corax.
111.	Orange headed ground trush	Geokichala citrina.
112.	Orange minivet	Pericrecotus flammeus.
113.	Oyster catcher	Haematopus ostralqus.
114.	Pales harrier	Circusmacrourus.
115.	Palm swift	Cypsiurs pervus.
116.	Pall's fishing eagle	Haliaeetus leucoryphus.
117.	Paradise flucatner	Terpsipone paradisi.
118.	Paddy field warbler	Acrocophlus uricos.
119.	Painted stork	I bis leuccocephalus.
120.	Pied bushcat	I bis.
121.	Pied kingfisher	Ceryle rudis.
122.	Pied ground thrush	Geokchla eredli.
123.	Pin tail	Anas actua.
124.	Pin tal	Anas actuao.
125.	Plaintive cuckoo	Carcemantis merulinus.
126.	Pond heron	Ardeola cinerea.

Serial number.	*Botanica' name.*	*Tamil name.*
(1)	(2)	(3)
127.	Praticncole	Glareola lactoea.
128.	Purple subbird.	Ginnyris zeylonicus.
129.	Purple rumped sunbird	Cinnyris zeyloncisu.
130.	Red vented bulbul	Pycaonetus cafer.
131.	Red turtle dove	Streptopelia tranqueberizca.
132.	Red breasted flycatcher	Musicapa paya.
133.	Red head merli	Falco chicquera.
134.	Red necked phalarope	Phallopus labatus.
135.	Red shank	Tringa Ochropus.
136.	Red sea crested term	Talasseus benegalensis.
137.	Ringed dove	Streptepelic dacaocto.
138.	River quail	Cothuriax coromandelica.
139.	Rain quail	Cothuraix cormandolica.
140.	Rose ringed parakeet	Pisttacula krameri.
142.	Rofus tailed fly catcher	Muscipa ruficanda.
143.	Rofus tailed fly catcher	Tadorna Ferruginea.
144.	Scarlet minivet	Pericretus flammeus.
145.	Short toed eagle	Circaetus gallicus.
146.	Shikata	Accipiter badius.
147	Shoveller	Anas Clypeata.
148	Sky lark	Aluda Ulgula.
149	Small minivet	Pericrocetus Cinnamomeus.
150	Spotted Owlet	Athene brama.
151	Spotted Mina	Uroloncha Punctualt.
152	Spot bill	Anas poecilorhyacha.
153	Spoon bill	Platalea leucorodia.
154	Stone curlew	Rrrinus oeti amus.
155	Tailor bird	Orthaotomus sotoriuns.
156	Temminek's stint	Calidris temminckii.
157	Thick billed warbler	Rhyloscopus procheleidea viridanus.
158	Tickle's flower pecker	Dicaeum erythrorhynchos.
159	Treepie	Endrocitta vajabunda.
160	Turn Stone	Strepsilas (Arenaria interpres).
161	Verditr flycatcher	Muscieaea thalassina.
162	Whimbrel	Numenius phaeopus.
163	White checked bulbul	Molpaspes leucogenys.
164	White chacked bulbul	Modaspes leucogenys.
165	White browed bulbul	Pycanotusleteolus.
166	White breased king fisher	Halycon smyrnensis.
167	White backed vulture	Cyps nemgalensis.
168	White eye	Zezterops palpe brosa.
169	White billed drongo	Deicrorus caculescene.
170	White breasted water bea	Amaurous phoenicurus.
171	White billed drongo	Deicrorus caerulescens.
172	White throated munia	Uroloncha malbarica.
173	White backed mina	Uroloncha striata.
174	White wagtail	Motacilla alba.
175	White throat lesser	Sylvia curruca.
176	Whiskwered tern	Chlidonias hybrida.
177	Whistling teal	Dendrycygan javanica.

Serial number. (1)	Botanical name. (2)	Tamil name. (3)
178 Whistling thrush	.. ..	Myophonus caeruleus.
179 Wire tailed swallow	.. ..	Hirundo smithii.
180 Wood shirke	.. ..	Tephrodornis pendicerianus affinus.
181 Yellow throated sparrow	.. .. ..	Jymorhis Zanthocollis.
182 Yellow wagtail	.. ..	Motacilla flaba.
183 Yellow wattled lapwing	.. .. ..	Vanellus alabericus.
184 White breasted sea-eagle	.. .. ..	Halineetus Leucogaster.
185 White breasted water hase	.. .. ..	

APPENDIX IV.

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The species recommended for planting in different type of soil are furnished below :--

Serial number and Type of soil. (1)	*Species suggested.* (2)	*Remarks.* (3)
1 Coastal sand	Casuarina aquisetiflia Calophilum inophllum Thespesia peapulena.	..
2 Mashy places	Eucalyptus rebusta, Eucalyptus rudis, Lagerstroemia florsreginae, Barringtonia Acutangula, Salinalbe.	..
3 Swampy areas	Sapium Sebiferum Arundodonax.	
4 Semi-water logged and saline soils ..	Tamarix articulata	Raised by branch cuttings.
5 Saline and Swampy soils	Butea frondesa.	
6 Water logged areas	Taxodium distictum	Exotic timber species.
7 Semi-water logged areas	Syzygium cumni Trewia nudiflora.	..
8 Fresh water swamps	Diosphyros embryopteris ptrospermum acerofolium Bischofia javanica canes, etc.	..
9 Kallar soil	Tamarix articulata.	

APPENDIX V.

List of areas available for planting of mislaneous species.—

Serial number. (1)	*Name of the river of channel.* (2)	*Length in Km.* (3)	*Remarks.* (4)
Kumbakonam Range.—			
1	Vedaranyam Channel	22	..
2	Odambokiyar	7.6	..
3	Kaduvaiyar	5.6	..
4	Venamacheri Voikkal	8	..
5	Pappanar Drain	8	..
6	Thaiyanthoppu Voikkal	1	..
7	Vettar	1	..

Serial number.	Name of the river of channel.	Length in km.	Remarks.
(1)	(2)	(3)	(4)
Thaniavur Range.—			
1	Madhalaimuthuvari Vari	5	..
Sirkali Range.—			
1	Poonthalai viakkal	15	..
2	Kittani Uppanar	5	..
3	Kuppiduvan Uppanar	5	..
Pattukottai Range.—			
1	Pattuvanachi Drain	5	..
2	Pulikutti vari	2	..
3	Maharajapuram River	5	..
4	Kasiviniyar Pudar from	5	..
	Valavampuram Anicut	5	..
5	Angiyar	5	..
Mannargudi Range.—			
6	Vedaranyam Channel	10	..
7	Valavanar	13.7	..
8	Manamkondanar	14.4	..
9	Kilaithagiyar	17.6	..
10	Marakka Koraiyar	11.2	..
11	Pudu Pandiyar	3.2	..
12	Era Vaikkal	12.8	..
13	Kannanar	3.0	..
14	Mulliyar	8.0	..
15	Nallur Channel	9.3	..
16	Chakkilian aikkal	12.0	..

APPENDIX VI.

LIST OF ROADS.

Serial number.	Name of Roads.	District Length of Road.	Roads details available for future planting Remarks.
(1)	(2)	(3)	(4)
1	Mariyamman Koyil Bye-pass Road	76-8-78-4	1.6
2	Nagai-Gudalur-Mysore Road	76-0-95-0	19.0
3	Perambalur-Manamadurai Road	53-0-65-6 53-0-85-4	12.6 32.4
	Major District Roads	..	..
4	Madras-Kumbakonam-Thanjavur Road	300-0-308-4	..
5	Thanjavur-Vaduvur Road	0-5-11-0	10.5
6	Thanjavur-Pattukottai Road	1-6-13-0	12.4
7	Grand Anicut-Cauveripattinam Road	33-0-38-0	5.00

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APPENDIX VI

LIST OF ROAD.

Serial number.	*Name of Roads.*	*District Length of Road.*	*Roads details. available for future planting Remarks.*
(1)	(2)	(3)	(4)
8	Thefur—Ayyampet Road	2-6-11-2	8.60
9	Thanjavur—Vallam Road	6-0-11-0	5.00
10	Vallam—Orathanadu Road..	6-8-11-0	5.00
11	Thottai—Milathur Road	6-8—11-0	4.2
12	Mariamman koil—Railway Feeder Road..	0-0-1-2	1.2
13	G.A. Canal Bank Road	0-0-16-0	16.0
14	Thanjavur—Nanjikottai Road	0-0-16-0	16.0
15	Vallam—Allakudi Road	0-0-6-8	6.8
16	Vennar—Vettar—Regulator Palli Agragharam	0-0-9-2	...
17	Jail Road	1-5-2-6	1.1
18	Medical College Road	1-5-2-6	...
19	L.B. of Vennar from Palli Agraharam to Thanjavur ...	...	...
	Panchayat Union Limit	0-0-6-0	6.0
20	L.B. Vettar from Madras Kumbakonam, Thanjavur Road from Kondanatanthidal.	0-0-5-4	5.40
21	K.V. of cauvery Thanjavur Thiruvaiyaru Road Melathannalur ..	0-0-6-0	5.4
22	L.B. of Vettai from Ceramboke Mannandurai Road .. Natathi Umarayal road to thenperambur	0-6-10-6	10.00
23	Kasanadu—Pudur Road	0-0-4-2	4.2
24	Road from 5/4 of Thanjavur Budhalur Road to Km. 4/6 of Thanjavur Vallar Road.	0-0-4-2	4.2
25	Thangapandiyanpatti Road	0-0-5-0	5.0
26	Karungulam Road	0-0-4-5	4.5
27	Karungulam East West	0-0-1-6	1.6
28	Kalyanapuram—Uppukatcheri Pettai Road	0-0 1-6	1.6

APPENDIX VII

UNION WAR ROAD DETAILS.

(a) *Roads available for future planting Thiruvonam— Union.*

Serial number and name of the Road.	*From*	*To*	*L.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)
1 Vengarai Village road	0/0	3/0	3.00	..
2 Kolukkadu— Ratharamkottai road	0/0	3/0	3.00	..
3 Neiveli— Idayathi road	0/0	3/0	2.20	..
4 Vethuvalkottai— Kollukadu road	0/0	1/2	1.20	..
5 Thoppuviduthi road	0/0	1/2	1.20	..
6 Panikondan Viduthi road	0/0	1/2	1.20	..
7 Kanaviduthi road	0/0	1/6	1.60	..

APPENDIX VII—*cont.*

UNION WAR ROAD DETAILS—*cont.*

Serial number and Name of the Road	*From*	*To*	*Length.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)
8 Kayavoor village road	0/0	1/2	1.30	..
9 Unjividuthi – Orathanadu Thiruvonam road	0/0	2/2	2.20	..
10 Unjividuthi burial ground	0/0	1/2	1.20	..
11 Valakkukottai– Sellathur road	0/0	1/2	17.20	..
12 Vadakku Athambi– South Athanbai road	0/0	3/0	3.00	..
13 Kanaividuthi– Sivaviduthy road	0/0	2/6	22.60	..
14 Kanaividuthy– Kalinachi road	0/0	1/6	1.60	..
15 Therukukkottai– Salangarai road	0/0	1/6	1.60	..
16 Padarankottai– North to South	0/0	2/4	2.50	..
17 K. Unjividuthy– Anandagopalapuram road	0/0	3/0	3.00	..
18 Sillathur– Krishnapuram road	0/0	1/2	1.20	..
19 Thirunattur– Poyyundar Kudikadu road	0/0	1/0	1.00	..
20 Thirunallur– Sellathur road	0/0	1/4	3.40	..
21 Rajalividuthu road . .	0/0	2/0	2.00	..
22 Lakshmipuram– Sellathur road . .	0/0	2/0	2.00	..
23 Vettikadu– Thaligarividuthi road	4/8	9/8	5.00	..
24 Velluvakottai road ..	0/0	2 0	2.00	..
25 Thirunallur road	1/0	5/8	4.80	..
26 Sholangarai road	1/6	3/4	1.80	..
27 Kilamangalam– Karanbayan road . . .	0/0	3 2	3.20	..
28 Sivaviduthi road	0/0	2/4	2.40	..
29 Manikaran Viduthi road	0/0	1 8	1.80	..
30 Kaduvetti Viduthi road	0/0	1/0	1.00	..
31 Puduviduthi road	0/0	1/0	1.60	.
32 Puduviduthi– Vettauvakkottai road	0/0	1/2	1.20	.
33 Nemmeli– Thippiakudi road	0/0	1/2	1.20	.
34 Kavalipatti road	0/0	1/0	1.00	.
35 Sengipatti– Pattukottai	0/0	1/0	1.00	.
36 Karambakudi– Veeradipatti road	0/0	1/6	1.60	.
37 Sengipatti– Pattukottai Pattupulividuthi road ..	0/0	2/0	2.00	.
38 Sivaviduthi– Senniaviduthy road	0/0	3/0	3.00	..
39 Thippanviduthy road	0/0	3/0	3.00	..
40 Kayavur– Oatharankottai road	0/0	3/0	3.00	..
41 Orathanadu– Thiruvonam	..	..	..	..
(b) *Highways road– Pattukottai.*				
1 Sengipatti– Pattukottai	44/6	53/0	9.6	..
2 Pattukottai– Aranthangi	00/0	7/0	r7.0	..
3 Pattukottai– Muthupet	48/0	63/0	15.00	.
4 Madukkur– Pattukottai	59/0	70/0	11.0	..
5 Pattukottai– Adrampattinam	7/2	68/8	11.6	..
6 Muthupet– Minisa	3/6	21/0	17.4	..

APPENDIX VII.

UNION WAR ROAD DETAILS.

(c) *Peravurani Highways Road.*

Serial number and Name of the Road.	*From*	*To*	*Length.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)
1 Peravurani—Sethubavachatram	0/0	10/2	10.2	..
2 Muthupet—Minisal	21/0	43/6	2.6	..
3 Nadia—Kuruvikarambai	0/0	4/4	4.4	..
4 Soorankadu—Valpiramankadu road	0/0	3/2	3.20	..
5 Kattyarkadu—Yukkdai road	0/0	14/2	14.2	..
6 Kuruvikarambai—Siruvalakadu	0/0	6/6	6.6	..
7 Ottangadu—Ayankudi	11/2	27/0	15.8	..
8 Puvaloor—Neiveli road	0/0	9/9	9.6	..
9 Perumagalur—Athani	0/0	7/2	7.2	..
10 Pookollri—Marakka Valasai	0/0	8/2	8.2	..
11 Sithathikadu—Keeramangalam	0/0	4/6	4.6	..
12 Tiruchitrambalam—Andikadu	0/0	14/2	14.2	..
13 Thiruchitrambalam—Madavakurichi	0/0	3/6	8.66	..

(d) *Sethubavachatram Union.*

1 Udauanadu—Seepaipattinam	0/0	2/0	2.0	..
2 Korathur—Ammanichatram	0/0	3/0	3.0	..
3 Mudugadu—A. V. Kovil	0/0	4/0	4.0	..
4 Pudupattinam—Vellerivayal road	0/0	2/2	2.2	..
5 Thurangudi — K. R. Puram	0/0	3/8	3.8	..
6 Chellapillaiyar—KovilKuupathevean	0/0	3/2	3.2	..
7 Kundamarikakadu—Palaveeri Kadu	0/0	2/0	2.0	..
8 Pattukottai—Sethubavachatram to Poovanam	0/0	1/4	1.4	..
9 Udayamadu—Aladikkadu	0/0	1/4	1.4	..
10 Pattukkottai—Sethubavachatram to Pillayarthidal ..	0/0	1/4	1.4	..
11 Pudupattinam Village road	0/0	1/2	1.2	..
12 Kuruvikarambai—Marugapallam	0/0	1/2	2.0	..
13 Kalagam—A. V. Koil to Chinnarethavayal	0/0	2/0	2.0	..
14 Veerakudi—Nelliyadi Kadu	0/0	3/0	3.0	..
15 Nelliyadikadu—Alathur	0/0	3/0	3.0	..
16 Veerakkudi—Malamenakkadu	0/0	2/4	2.4	..
17 Othangadu	0/0	2/4	2.4	..
18 Perumagalur North to Thorangudi	0/0	3/0	3.0	..
19 Karupattikadu Village road	0/0	2/0	2.0	..
20 Thiruvathiavoor Village road	0/0	2/0	2.0	..
21 Somanathapattinam	0/0	2/0	2.0	..
22 Kalagan—A. V. Koil to Kalankikottai	0/0	3/0	3.0	..
23 Mudichikkadu—Kavivanavayal	0/0	4/0	4.0	..
24 Nediam—Naduvikottai	0/0	2/0	2/0	..

(d) *Sethubavachotram Union*—cont.

Serial number and Name of the Road.	*From*	*To*	*Length.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)
25 Nedium—Sathanpet	0/0	2/0	2.0	..
26 Kundamaraikadu—Karamburkadi	0/0	3/0	3.0	..
27 Kanjankadu village road	0/0	3/2	3.2	..
28 Rentamulikadu village road	0/0	3/0	3.0	..
29 Karisavayal—Karambakudi	0/0	2/0	2.0	..
30 Keelapavanam village Road	0/0	2/0	2.0	..
31 Pudupattinam—Puthakulan	0/0	2/2	2.2	..
32 Manakkadu—Mangalmedu	0/0	2/4	2.4	..
42 Konnaikadu—Thirupulichadu	0/0	1/6	1.6	..
43 Konnaikkadu—Kuruvikarambi road	0/0	1/6	1.6	..
43 Konnaikadu—Kuruvikarambai	0/0	1/0	2.0	..
44 Kalagam—Karambekadu road	0/0	2/6	2.6	..
45 Kalagal Anaikadu	0/0	2/0	2.0	..
46 Seruviaviduthi — Kalathur road	0/0	4/4	6.4	—

(e) *Pattukottai Union.*

1 Pannavayal—Koodaivayal road	0/0	3.2	3.2	..
2 Adirampattinam—Railway gate to Erugapurakkarai road	..		2.0	
3 Kargavayal to Pannaravayal road	..		4.4	
4 Anaikadu—Pa anjur road	..	..	7.4	
5 Anaikadu—Palanjur road	..		2.8	
6 Karambayam—Alathur road (via) Keelakarambayam Sembalur road.	..	..	4.2	
7 Othiyadikadu—Pudukottagam (via) T. Melakkadu ..	..	..	6.4	
8 Adirampattinam-Thokkalikadu (via) Mahibankottai ..		..	5.4	
9 Nattuchalai—Thuvakurichi (via) Venadakkottai road ..	..	..	6.0	
10 Kondikulam—Naduvikkottai road	..	..	3.0	..
11 Pathamnadu—Pudukottaga road (via) T. Vadakkadu ..	..	..	7.0	..
12 Erupurakarai—Rajamadam (via) Keelthottam	..	..	5.0	..
13 Sethu road to Thuvarur Kuruchi (via) Sengapaudathangadui.	..	..	4.0	..
15 Karambayam—Veepangadu road	0/0	5/0	3.0	—
16 Rasiyankadu—Maravakadu road	0/0	6/0	5.0	—
17 Keelasembalur road	0/0	2/0	2.0	—
18 Nattuchali-Chethiyakadu	0/0	3/0	3.0	—

(*f*) *Peravurani Union*

1 Pinnavasal-Chithkadu road	0/0	2/0	2.0	..
2 Sengamangalam road	0/0	2/0	2.0	..
3 Sengamangalam Keel road	0/0	2/0	2.0	..
4 Sengamangalam-Palayakottai road	0/0	7/0	7.0	..
5 Ammayanadi road	0/0	1/5	1.5	..

(f) *Peravurani Union*—cont.

Serial number and name of the Road. (1)	*From* (2)	*To* (3)	*Length.* (4)	*Remarks.*
6 Ammayandi-Enndadikarambai road	0/0	1/5	1.5	
7 Alivalam road	0/0	1/5	1.5	
8 Palathals-Eluthanviayal road	0/0	2/0	2.0	
9 Ennaivayal-Kuzhi road	0/0	2/0	2.0	
10 Thiruchitrambalam-Pullanviduthi road	0/0	2/0	2.0	
11 Pudupattinam-Nariyankadu road	0/0	2/4	2.4	
12 Mavadukurichi-Chithathiladu road	0/0	3/2	3.2	
13 Pattukottai-Aranthangi road	0/0	1/2	1.2	
14 Thiruchitrambalam-Mavadukurichi to Pullanviduthi ..	0/0	1/6	1.6	
15 Thiruchitrambalam-Mavadukurichi to Pullanviduthi ..	0/0	1/6	1.6	
16 Uppuviduthi-Vattathikottai road	0/0	2/0	2.0	
17 Sooriyanarayanapuram to Edayathi road	0/0	1/5	1.5	
18 Thuravikkadu-Poovalur road	0/0	1/5	1.5	
20 Valasaikkadu-Thiruchitrambalam	0/0	1/0	1.0	
21 Punavasal east-Pattukottai road	0/0	3/0	3.0	
22 Punavasal east-Thuravikadu road	0/0	3/0	3.0	
23 Punavasal-Ottangadu road	0/0	4/9	4.0	
24 Kuruchi-Palathalai road	0/0	2/5	2.5	
25 Poovalur-Neiveli road to Meetuuvayal road ..	0/0	1/0	1.0	
26 Poovalur-Neyveli road to Kayavoor road	0/0	2/5	2.5	
27 Poovalur-Neiveli road to Neivaviduthi road ..	0/0	1/0	1.0	
28 Poovalur-Neiveli road to Jeevapuram road	0/0	2/0	2.0	
29 Edayathi-Sooriyanarayanapuram road	0/0	3/0	3.0	
30 Edayathi east-Seruvaividuthi North	0/0	6/0	6.0	
31 Edayathi-Velanpatti (Via) Venkarai	0/0	2/0	2.0	
32 Eachaividuthi-Karukkakurichi road	0/0	6/0	6.0	
33 Kollaikkadu-Vattathikottai	0/0	2/0	2.0	
34 Kollaikadu-Mathanpattavan	0/0	2/0	2.0	
35 Kalyankadu-Mathanpattavan	0/0	2/0	1.0	
36 Ottangadu-Punavasal east road	0/0	2/0	2.0	
37 Kallurankukadur-Valesakadu	0/0	2/0	2.0	
38 Merpanaikadu-Ayingudi road	0/0	2/0	2.0	
39 Sorakkadu-Balakrishnapuram road	0/0	5/0	5.0	
40 Valambirangadu road Veeragudi main road ..	0/0	7/0	7.0	
41 Nadangadu-Kallurainikadu road	0/0	2/0	2.0	
42 Mudalicheri Nanmangalam	0/0	5/0	5.0	
43 Mahilambottai-Kudalivayal	0/0	5/0	5.0	
44 Thamarankottai-Vattakudi road	0/0	1/4	1.4	
45 Maliyakadu road	0/0	3/0	3.0	
46 Parakkalakottai	0/0	3/0	3.0	

Thiruvonam Union	86.6
Highways-Pattukottai	71.6
Highways Peravurani	129.4
Sethuba-vachatram Union	83.0
Peravurani Union	115.5
Pattukottai Union	99.8
	585.9 Km.

(g) Mannargudi Range.

Mannargudi Union and other Roads.

Serial number and name of the Road.	Beginning.	Ending.	Total length in CMs.
(1)	(2)	(3)	(4)
I. State Roads—			
1. Nagapattinam—Gudalur Mysore road	45.40	59.925	14.525
II. Major District Roads—			
1 M.D.R. 10 Kumbakonam—Mannargudi—Madukkur road	24.600	49.600	25.600
2 M.D.R. 1A Thanjavur—Mannargudi-Vaduvoor (via) ..	24.400	36.00	14.400
3 8 Mannargudi—Thiruthuraipoondi road	0.000	17.600	17.600
4 2 Mannargudi—Thiruvaroor road	1.600	19.032	17.432
5 14A Kumbakonam-Koradacheri-Lakshamangudi-Mavoor road.	32.00	52.000	20.000
6 24 Kottur-Menamanallur road	0.000	6.400	6.400
7 MDR 24 Mannargudi—Orathanadu road	4.800	12.800	8.000
8 Pappanadu-Madukkur—Perugavindhen road	24.8	26.00	1.200
			100.082
(h) III. Other District Roads—			
1 Mannargudi—Pattukottai (via) Vadacheri	1.800	12.400	10.600
2 Mannargudi—Thirumakkottai	2.000	16.000	14.000
3 Mannargudi—Muthupet	0.000	29.800	29.800
4 Mannargudi—Thirumakottai Chokkanavur road	16.000	24.400	6.400
5 Ammapettai—Vaduvoor road	4.800	11.500	6.700
6 Pamini village road	0.00	1.400	1.400
7 Devangudi road	0.00	7.400	6.400
8 Mannargudi—Moovanallur road	0.00	6.400	7.400
9 Edamalaiyur—Chettichatram	0.00	2.400	2.400
10 Edakulaiyar—Vaduvoor road	6.400	13.400	7.000
11 Erajapalayan Chavadi—Rayapuram road	6.400	10.200	10.200
12 Old Needamangalam—Anumanthapuram road	0.000	3.200	3.200
13 Sithamalli—Pannidamangalam road	0.000	3.600	3.600
14 Koraiyar left bank road			10.400
15 Palaiyanur—Velugudi road	0.000	3.175	3.175
16 Thattakoil—Banks of Koraiyur	0.000	6.4000	6.400
17 Pattakara theru	0.000	2.700	2.700
18 Thirurameswaram—Pandugudi road	0.000	5.200	5.200
19 Koothanallur—Adichapuram road	5.400	101000	4.600
20 Needamangalam—Valucheri road	0.000	12.200	12.200
21 Memmeli road	0.000	1.600	1.600
22 Thirukkalur village road	0.000	1.000	1.000
23 Periyur—Thittagudi road	0.000	5.000	5.000
24 Kanchkudikadu—Karuvakkurichi road	0.000	6.000	6.000
25 Adanoor mandapanam—Vaduvoor road	0.000	11.690	11.690
26 Devangudi—Koradacheri road	0.000	1.600	1.600
27 Vadasergathi-Ariyalur—Kulamanikkam road	5.000	10.500	5.500

Serial number and name of the Road. (1)	Begining. (2)	Ending. (3)	Total length in CMs. (4)
28 Natarajapillai street	0.000	0.690	0.690
29 Mariamman koil street	0.000	0.380	0.380
30 Thanikottai—Mahadevapattinam	2.400	4.400	0.380
31 Sankanthi—Sethiyakurichi road	5.800	10.200	4.400
32 Kandamangalam—Vedapuram Road	10.000	10.000	9.000
33 Pamniri-Udayauramanyum road	1.400	3.00	1.6000
36 Thuasendrapuram road	0.000	2.200	2.200
37 Ullikottai village road	0.000	2.200	2.200
38 Mahadevapattinam village road	0.000	6.400	2.400
39 Paravakkottai-Painganadu road	0.000	2.600	6.400
40 Edayarnattam – Sundrakottai road	0.000	4.200	4.200
41 Ullikottai road-Pavarkottai	0.000	4.200	4.200
42 Pavakkottai—Nemmeli road	0.000	4.000	4.000
43 Cherankulam-96 Nemmeli road	0.000	4.800	4.800
44 Harichandrapuram—Thiruvaroor road	0.000	4.600	4.000
45 Kavothanallur—Adichapuram road	0.000	4.400	4.200
46 Punavasal –Kilamalai road	0.000	4.200	4.200
47 Thulasandrapuram—Painganadu	0.000	1.600	1.600
48 Thenkovanur village road	0.000	1.800	1.800
49 Vallikottai—Koopachikottai	0.000	1.600	1.600
50 Kuppachikottai village road	0.000	1.800	1.800
51 Sitheri village road	0.000	2.400	2.500
52 Kandithapettai—Velikottai road	0.000	2.400	2.400
53 Chorapur village road	0.000	1.400	1.400
54 Edaiyur Nattam—Kilunthattam road	0 000	1.200	1.200
55 Periyakottur village road	0.000	1.600	1.600
(i) Mannargudi Union roads—			
1 Nayangudi village road	0.000	0.600	0.600
2 Sathangudi	0.000	0.800	0.800
3 Moolangudi	0,000	1.200	1.200
4 Kandithampattai	0.000	1.200	1.200
5 Manakkarai	0.000	1.200	1.200
6 Moovanallur—Regaikudijadur road	0.000	1.200	1.200
7 Naduvakkottai village—Regaikudijadur road	0.000	1,200	1.200
8 Kilathirupalakudi road	0.000	1.600	1.600
9 Vasapathi village road	0.000	1.600	1.600
10 Vettaithidal	0.000	0.800	0.800
11 Ranapuram road	0.000	1.200	1.200
12 Alacheri road	0.000	0.800	0.800
13 [illegible]anipalan road	0.000	0.000	0.400
14 [illegible] road	0.000	0.400	0.400

Serial number	Name of the Roads	Starting	Ending	Total
(1)	(2)	(3)	(4)	(5)
15	Kudikadu Harijan colony road	0.000	0.800	0.800
16	Kuchipalayam road	0.000	0.400	0.400
17	Cholaneri road	0.000	0.800	0.800
18	Vadavanoor Harijan Colony road	0.000	0.400	0.400
	Needamangalam Union Roads—			
1	Vaduvoor—Sathanur road	0/0	2/0	2.000
2	Serumangalam—Apparsumpettai road	0/0	5/0	5.000
3	Kovilenni—Kuchipalayam road	0/0	3/0	3.000
4	Royapuram— Poovarur road	0/0	2/0	2.000
5	Vadugavaya—Perampur road	0/0	2/0	2.000
6	Moovarakootai—Kikikudi road	0/0	8/0	8.000
7	Navalpoondi road	0/0	1/4	1.400
8	Munavarkottai—Chettichatra	0/0	2/8	2.800
9	Koilvenni Railway connection road	0/0	0/2	0.200
10	Edamelaiyur Chettichatram	2/4	6/4	4.000
11	Ovalquadi—Kuruuvakurichi road	0/0	1/0	1.000
12	Kovilvenni—Sikkapattu road	0/0	7/0	7.000
13	Karkottai—Kattuquadi road	0/0	2/2	2.200
14	Edakilaiyur—Chettichatram	0/0	2/2	2.200
15	Old Needamangalam—Anumanthapuram	0/0	2/2	2.200
				47.600

Thiruthuraipoondi Sub divÆsion.

Serial number and name of the roads.	Total K.M
(1)	(2)
I. List of roads—	
(i) Union roads	60.2
(ii) Panchayat roads	2.6
II. Thalanayar Panchayat Union—	
(i) Union roads	53.8
(ii) Panchayat roads	18.40
III. Muthupet Panchayat Union—	
(i) Union roads	71.038
(ii) Panchayat roads	6.8
IV. Vedaraniyam Panchayat Union—	
(i) Union roads	299.20
(ii) Panchayat roads	9.6
	521.98

Thiruthuraipoondi, Panchayat Union.

Serial number and Name of road.	From	To	Total
(1)	(2)	(3)	(4)
1 Melamarudur—Vanduvancheri Road	0.0	3.8	3.8
2 Melamarudur—Ekkal Road	[illegible]	[illegible]	[illegible]

Serial number (1)	Name of the Roads (2)	Starting (3)	Ending (4)	Total (5)
3	Pitchankottagam—Melvadapathi Road	00	2.4	2.4
4	Adirengam—Thalaikkadu Road	0.0	3.8	3.8
5	Pamani—Village Road	0.0	3.8	3.8
6	Pamani—Mullar Road	0.0	2.0	2.0
7	Kokkaladi—Thalanayar Road	0.0	6 4	6.4
8	Korukkai—Thaaikkadu Road	0.0	4.0	4.0
9	Kokkaladi—Maracheri Road	0.0	1.8	1.8
10	Ezhilur—Elangar Road	0.0	2.4	2.4
11	Katchanam—Manjavadi Road	5.0	9.2	4.2
12	Thirunellikkavi—Thiruthangoor Road	0.0	1.4	1.4
13	Vallam—Ponnirai Road	0.0	2.6	2.6
14	Komal Adanur Road	0.0	3.2	3.2
15	Varambiam village Road	0.0	1.8	1.8
16	Manali—Arunthavampulam Road	8.8	10.6	1.8
17	Thiruvalanjuli Road	0.0	2.0	2.0
18	Royanallur—Chidambara kottagam Road	0.0	3.0	3.0
19	Nedumbalam—Mangalnayahipuram	0.9	10.68	1.6
20	Thethaiyan Mudukku Road	0.9	1.6	1.6
21	Kodiyacheri village Road	0.0	0.8	0.8
22	Devampalpuram Road	0.0	0.8	0.8
23	Keeralathur—Andankarai Road	0.0	1.6	1.6
24	Royanallu—Kaduvkethamangalam	0.0	2.0	2.0
25	Panaiyur village Road	0.0	2.4	2.4

Panchayat Roads.

1	Nedumbulam—Railway Feeder road	0.0	0.4	0.4
2	Pamandur—Vilathur road	0.0	1.8	1.8
3	Kayanallur—Melatheru road	0.0	0.4	0.4

Thalanayar Panchayat Union Roads.

1	Panagal—Panangadi Road	0.0	2.0	2.0
2	Thalanayar—Karapidagai Road	0.0	2.8	2.8
3	Kothankudi—Ayyur Road	0.0	2.8	2.8
4	Odachery—Vdugoor Road	0.0	3.0	3.0
5	Sembivilagam—Ayamoor Perumalai Road	0.0	4.8	4.8
6	Thalanayar—Umbalacheri Road	0.0	7.2	7.2
7	Thalanayar—Vendal Road	0.0	6.4	6.4
8	Monakkudi—Vadugoor Road	0.0	2.2	2.2
9	Katchamangalam—Mutharasapuram Road	0.0	2.0	2.0
10	Kovilpathu village Road	0.0	3.6	3.6
11	Valuvethapaethi village Road	0.0	2.4	[illegible]

Serial number	Name of the Roads	Starting	Ending	Total
(1)	(2)	(3)	(4)	(5)
12	Manali—Arunthavampulram Road	10.6	15.4	4.8
13	Kokkaladi—Maracheri Road	1.8	3.6	1.8
14	Kokkaladi—Thalanayar Road	6.4	10.6	4.2
15	Vellappalam village Road	0.0	3.6	3.6
	Panchayat roads :			
1	Puthur village Road	0.0	1.10	1.10
2	Kodiavinayaganallu Road	0.0	1.10	1.10
3	Sakkai village Road	0.0	0.80	0.80
4	Kovilpathu—Periyakuthagi Road	10.4	16.8	6.40
5	Averikkadu—Kathripulam Road	0.0	0.80	0.80
6	Kothangudi—Thuladur Road	0.0	1.20	1.20
7	Sithaimoor—Keerambiar Road	0.0	2.00	2.00
8	Kadenthethi village Road	0.0	0.40	0.40
9	Mangudi village Road	0.0	0.60	0.60
10	Sithiambur village	0.0	2.40	2.40
11	Perumalai Puduvoikkal Road	0.0	1.60	1.60
	Muthupet Panchayat Union.			
1	Thiruthuraipoondi—Paravokottai road	7.6	8.8	1.2
2	Pandi—Adirengam road	0.0	3.2	3.2
3	Kunnalur—Ekkai road	0.0	3.2	3.2
4	Vepancheri—Keelapandi road	0.0	3.4	3.4
5	Ekkal—Melabardur road	0.0	2.4	2.4
6	Mangudi—Marudhavanam road	0.0	1.74	1.74
7	Ariyalur-Sothiriyam road	0.0	0.68	0.68
8	Sanganthi—Mettukottagam road	0.0	3.03	3.03
9	Ariyalur—Kaduveli road	0.0	5.0	5.0
10	Keelapandi Sembiamangalam	0.0	0.80	0.80
11	Sanganthi—Chettiyakurichi road	0.0	5.80	5.80
12	Tholi—Thillaivilagam road	0.0	2.00	2.00
13	Muthupet—Keelamangammankurichi road	0.0	3.20	3.20
14	Thillaivilagam—Kallikararai road	0.0	3.00	3.00
15	Sirupattakarai—Pattaveli road	0.0	1.20	1.20
16	Thillaivialgam—Melathonddyakkadu road	0.0	2.648	2.648
17	Pandi kalpagan harku am road	3.2	8.90	8 90
18	Keelaperumalai—Pethaviagkottagam road	0.0	1 95	1.95
19	Jambuvanodai colony road	0.0	3.2	3.2
20	Tholi—Kalaikkaranveli road	0 -	2.25	2 25
21	Idumbavanam—Thondiyakkada road	0 6	4.6	40
22	Sirupanaiyur—Vadakkupinnathur road	0 0	1.4	1.[illegible]
23	Jambuvanodai—Pettai road	0.0	2.625	[illegible]

Serial number	Name of the Roads	Staring	Ending	Total
(1)	(2)	(3)	(4)	(5)
24	Alangudi—Kottasirupattikara road	0.0	1.80	1.80
25	Karpaganatharkulam—Thondiyakkadu road	0.0	4.60	4.60
26	Pinnethur—Noth—Natham—Elaiyarkadu	0.0	1.20	1.20
	Muthupet Union Panchayat Road :			
1	Pandi—Peede rroad	0.0	0.2	02
2	Sundram Railway Feeder road	0.0	0 6	0.6
3	Uppur—Erumavettithidal road	0 0	1.2	1.2
4	Kuzathangi—Sala (Kumarapuram	0.0	1 2	1 2
5	Vepancher road	0.0	0 6	0 6
6	Kangudi—Annapalayam road	0 0	0.6	0.6
7	Ovanoor 10th Street road	0 0	2.4	2 4
	Vedarayan Panchayat Union Road:			
1	Melamarudur—Vanduvenacheri road	3 8	7.4	3 8
2	Kuruvapuralam—Pannal road	0.0	3.6	3 6
3	Koriapattinam—Railway feeder road	0.0	0.2	0.2
4	Kuruvapuralam Railway Feeder	0.0	0.2	0.2
5	Agasthiampalli—Thennadar road	0 0	17.8	17.8
6	Thalakkadu—Karipattinam road	8.0	8.0	5.
7	Koilpathu—Perikuthagai road	0.0	10 4	10.4
8	Nagakudiyar—Katharpulam road	0.0	8.4	8.4
9	Moolakarai—Pirathiyajarai road	0 0	3.3	3.2
10	Ayyakaranperualam—Kariapattinam road	0.0	8.0	8.0
11	Kariapattinam—Marudur North road	0.0	5.2	5.2
12	Ayakkaranpulam—Pannal road	0.0	3.6	3.6
13	Thagattur—Thennadar road	0.0	1.8	1.80
14	Karuppampulam—Harijan colony road	0.0	1.0	1.0
15	Ayakarapulam—III sethi Vth sethi road	0.0	3.0	3.0
16	Karuppampula—Kodinayal road	0 0	4.0	4.0
17	Manchachimadai—Valavanar road	0.0	4.0	4.0
18	Road braching from Voimedu Thulasipattinam road to Voimedu pumset road (via) Panchayat Office	8.0	7.0	7.0
19	Sengathalai bridge Vedaranyam Union road Marudur North Limit Road (via) Railway gate	0.0	4.0	4.0
	Road branching from MDR 3A Km 55/0 to Agastjiampalli Thennadar road (via) Pannai Panchayat	0.0	4 0	4 0
21	Sengathala bridge Vedaranyam Union road to Thagattur (Limit) road (via) West Railway gate	0.0	4.0	4.0
22	Kodiayakkrai Sethu Rustha to Light House road (via) Manavalrupakadu	0.0	5.0	5.0
23	Annakonar—Chathiram Marudur south road	0.0	4.0	4.0
24	Road branching Annakonarchatram to Marudur south Road to Thenndar road (west)	0.0	5.0	5.0
25	Road branching from Anna Konar chatram Mudur south	0.0	0.4	4.0

Serial number	Name of the Road	Starting	Ending	Total
(1)	(2)	(3)	(4)	(5)
	Vedaranyam Panchayat Union Roads—cont.			
26	Road branching from Thagattur Thennandar road to Panchapathikulam Nadu sethi road	0.0	5.0	5.0
27	Road branching from Ayakaranpulam—Kariyapattinam road (back side to Thingal santhau Kuruvapural road (via) Palaya Agraharam	0.0	5.0	5.0
28	Road branching from Ayyakkarpulam Kariyapattinam road to Under Pidarai Koil Kuruvampalayam road (via) Pitchankattalai road	0.0	5.0	5.0
2	Vellikidangu— Harijan colony road	0.0	4.0	4.0
3	Southakadu— Pitchankattalai road	0.0	5.0	4.0
31	Chinnaperambakadu— Gopala Kattalai road :	0.0	4.0	4.0
32	Road branching from Kurupulam Kuruppampula road to Sengathalai bridge Vedaranyam road (via) Ramandam— Neivilakku	0.0	4.0	4.0
33	Road branching from Thirutt iraipoondi— Vedaranyam road near the chetti Kuthagai chatram to Ayyakkaranpural 1st sethi road.	0.0	4.0	4.0
34	Road branching from Thirupoondi Vedaranyam road near the chettira Kuthagai chatram to Ayakkaranpulam 1st Sethi road	0.0	4.0	4.0
35	Thagattur— Chettianadu—Adhiyankadu road	0.0	5.0	5.0
36	Thagattur— IIIrd No. Bhairavanthansami Koil road	0.0	4.0	4.0
37	Thagattur— IIIrd No. Ramagovindan road	0.0	4.0	4.0
38	Road branching at 3/4 of Kuruvapalayam Karupambulam road to Kuruvapulam Pt. road via H.C. Melakadu road	0.0	2.0	2.0
39	Road branching at Km. 2/0 of Kuruvpulam Paruppamkulam Road (via) Harijan Coliar Street) Sengathalai Bridge— Vedaranyam road ((Vadakku Road)	0.0	2.2	2.2
40	Road branching at Km. 0/6 of Karuppambulam Kadinavayal road to (via) San santhi road Kuruvapulam Pannel— road (Sani Sandhai road	0.0	1.2	1.2
41	Thethakudi— North sethi in Ngt Rustha to Mavadi Voikkal road (via) Kuruvapulam Karthirpul road	0.0	4.0	4.0
42	Kuruvapulam Limit south sethi road	0.0	5.0	5.0
43	Road branching from Karuppambulam Kadinavayal road to Athanur koil theru road (in Athanur Pt. at Koviltheru village) ..	0.0	3.0	3.0
44	Road branching from Karuppam bulam Kadiavayal road Pannel Pt. Road	0.0	4.0	4.0
45	Karuppambulam— Sani santhai to Ayakkaranpulam IIIrd sethi Ohayar santhai	0.0	4.0	4.0
46	Chettipulam to Sembodai road (via) Katharipulam Panariyardi Kuthagai.	0.0	8.0	8.0
47	Katharipulam Union road to Thethakudi North Sethi road (via) Keel kuthagi.	0.0	8.0	8.0
48	Thoppurai-Manmathankoil to Periyakuthagai road (Elanthai yadi road).	0.0	3.0	3.0
49	Road branching from Agasthiampalli Thennanadar road (alias) Kailavanapettai (via) MDR 3A connection road.	0.0	4.0	4.0
50	Ayakkaranpulam IVth Sethi Muttagam road (South north road) ..	0.0	3.0	3.0
51	Ayakkaranpula IIIrd Sethi south Limit to Agasthiampalli-Thennadar road connection road (via) Sarswathi ele. School Pt.Office.	0.0	5.0	5.0
52	Road branching from Agasthiampalli Thonnadar road to High-road (north side connection road (viz) Mannakondan river.	0.0	4.0	4.0
53	Road branching from Sengathalai road (north side) of Kuruvampulam Railway station road to Kathraipulam leading to Angalam-mankoil road.	0.0	4.0	4.0

Serial number	Name of the Roads	Starting	Ending	Total
(1)	(2)	(3)	(4)	(5)
54	Road branching from Sengathalai road at Kuruvapulam Railway gate to Nagapattinam road connection road (via) Kattukarai voikkal (Thethakudi North and South road) Sethi.	0.0	8.0	8.0
55	South east road in Panchanathikulam west Panchayat	0.0	4.0	4.0
56	Santhandavedevankadu road in Panchapathi kulam west Panchayat.	0.0	2.0	2.0
57	Road branching from Ayakkurankulam Kariapattinam road to Marudur south.	0.0	4.0	4.0
58	In connection road from Ayakkurankulam Kariapattinam road to Maduru North road.	0.0	4.0	4.0
59	Nagapattinam Rustha to Kunjan Kadu road (via) Thethakudi south Pt. Office.	0.0	5.0	5.0
60	Road branching from Koilpathu Perikuthagai road to Nagapattinam Rushtahroad (via) Rammathaneerkulam.	0.0	1.0	1.0
61	Piranthiyankarai-Sembiyamanakudi road	0.0	2.4	2.4
62	Pirathiyakarai-Hubalacheri road	0.0	1.6	1.6
63	Keelakadu-Melakkadu road in voimedu Panchayat	0.0	8.0	8.0
64	Voimedu-Vettian road	0.0	1.6	1.6
65	Voimedu-Manaktchimedai	0.0	1.6	1.6
66	Sembodai-Nagakidayan road	0.0	5.4	5.4
67	Kathiripulam-Union road to Branching from Vizhan Santhai Nagakudiyan Sembodai road connection road (via) Harijan colony.	0.0	5.0	5.0
68	Periakuthagai limit to Naluvedupathi road	0.0	6.0	6.0
69	Katharipulam-Kariapattinam road in Chettipulam Panchayat ..	0.0	5.0	5.0
	Vedaranyam union Panchayat Roads :			
1	Karipatthinam village road	0.0	3.6	3.6
2	Chettipulam-Thalanayar road	0.0	2.0	2.0
3	Road connection from Vadakku road to Neivilakku Panchayat ..	0.0	1.0	1.0
4	Siruthalakaikkadu village road	0.0	3.0	3.0
	Total ..		9.6	9.6

Serial number.	Classification of road.	Total.
(1)	(2)	(3)
1	Major district road	154.70
2	Other District road	137.43
		292.13

THIRUTHURAIPOONDI SUB-DIVISION.

Government Section Roads.

(1)	(2)	(3)	(4)	(5)
	II. Other Disrict Roads :			
1	ODR—11 Velangaman-Vedanyam road	24.8	45.8	21.0
2	PDR 12 Mannargudi-Muthupet	29.8	34.0	4.2
3	Pamani-Kallikedu road	0.0	8.0	8.0

THIRUTHURAIPOONDI SUB-DIVISION—*cont*

Government Section Roads—cont.

II. Other District Roads—cont.

Serial number	*Name of the Roads*	*Starting*	*Ending*	*Total*
(1)	(2)	(3)	(4)	(5)
4	Gopasamudram-Vormedu road	0.0	17.2	17.2
5	Gopalasamudram-Thillaivilagam road	0.0	0.8	0.8
6	Thillaivilagam-Temple road	0.0	1.0	1.0
7	Thillaivilagam-Jambuganodai road	0.0	6.4	6.4
8	Vilakkuli-Manadi road	0.0	8.8	8.8
9	Vaikkudi-Manniyar road	3.2	7.2	4.0
10	Neermulai-Ettukudi road	0.0	4.5	4.5
11	Kokkaladi-Thalarayar road	10.6	13.8	3.2
12	Kuravapulam-Maruppmbulam road	0.0	4.0	4.0
13	Nedukkadu-Pannai road	0.0	0.89	0.89
14	Uthayamarthandapuram-Kummattithidal	0.0	4.2	4.2
15	Idubavanam-Thodiyakkadu road	0.0	0.6	0.6
16	Pandi-Karpaganatharkulam road	0.0	3.2	3.2
17	Nedumbalam-Marthavanam road	4.6	7.6	3.0
18	Vedasengathai-Ariyalur road	0.0	5.0	5.0
19	Sengathalai-Bridge to Vedaniyam road	0.0	21.2	21.2
20	Katchanam-Manjavadi road	0.0	5.0	5.0
21	Kothamanganal village road	0.0	4.24	4 24
22	Thiruthuraipoondi-Paravakottai road	2.4	7.6	5.2

Government Section Road.

1. Major District Roads:

1	MDR 2 Mannargudi-Thiruthurai-Poondi	17.6	28.2	10.6
2	MDR 3A Thiruthuraipoondi-Vedaranyam road	29.0	63.6	34.6
	MDR 3B Vedaranyam-Kodiyakkarai road	0.0	11.2	11.2
4	MDR—Mayiladuthurai-Muthupet road	55.2	94.4	39.2
5	MDR 5—Pattukottai-Muthupet road	63.6	67.0	3.4
6	MDR 11—Velanganni-Thiruthuraipoondi	27.0	40.2	13.2
7	MDR 13—Keevalur-Katchanam road	16.4	20.4	4.0
8	MDR 24A—Meenamanallur-Senganthi road	6.4	14.2	7.8
9	MDR 28—Thirunellikaval-Kolappadu Karunganni road.	10.5	17.6	7.2
10	Alathambadi-Alabgudi road	16.0	27.0	11.2
11	Alangudi-Thalanayar-Thalanthiruvasal road	27.2	30.2	12.0
12	Muthupet Railway feeder road	0.0	0.3	0

KATTUR PANCHAYAT UNION.

List of Unmotorable roads.

Serial number	*Name of roads.*	*Unmotorable.*		*Motorabale.*
(1)	(2)	(3)		(4)
1	Thirumakottai-Othaiveedu road	0/0	1/2	1.20
2	Vatta-Kalappal road	0/0	2/6	2.60
3	Karuppukilar-Karambakudi road	0/0	2/8	2.80

KATTUR PANCHAYAT UNION—*cont.*

List of Unmotorable Roads—**cont.**

4	Komalapettai-Karuppikilar road	0/0	0/6	0.60
5	Mangottai road	0/0	1/8	0.80
6	Sithamballi Harijan Colony road	0 0	1/6	1.60
8	Nachiyar road	0 0	2/4	2.40
10	Easanakudi road	0 0	0 8	0.80
11	Narnavur road	0/0	1/2	0.80
12	Kunniyar road	0/0	1/6	1.60
13	Thirumakottai Harijan colony road	0/0	0 8	0.80
14	Sothiriam Pulithakudi road	0/0	0/8	0.80
15	Vadakkadu road	0/0	2/4	2.40
16	Akkarakottagam-Karambakudi road	0/0	3/2	3.20
17	Overcheri-Thiruvanakudi road	0/0	1/0	1.00
18	Maileripuram road	0/0	1/2	1.20
19	Mannukundan road	0/0	1/2	1.20
20	Dendamaraikan-Kalaikaravveli	0/0	2/0	2.00
				30·80

List of Motorable unmotorable road.

Serial number.	*Name of the Roads.*	*Starting.*	*Ending.*	*Total.*
(1)	(2)	(3)	(4)	(5)
1	Kandamangalam-Vedapuram road	10/0	19/0	9.00
2	Senganthisethivayakurichi road	10/4	14/0	3.60
3	Seuvani-Visalakshipuram road	0 0	2/0	2.00
4	Vikkirapandian-Pulithikudi	0 0	3/0	3.00
5	Perugavalandan-Mannakundan road	0/0	4/0	4.00
8	Kalappai-116 Kulamanickam road	0/0	6/0	6.00
9	Palavai-Sethiraiam road	0/0	4/0	4.00
12	Elevanur-Sothiraam road	0/0	30/0	3.00
13	Nerijikudi-Sothiriam road	0/0	2/0	2.00
14	Nallanyanaipuram	0/0	2/0	2.00
15	Cheri-Marudhoor road	0/0	2/0	2.00
16	Palayur-Palayakottai road	0/0	4/0	4.00
17	Solaganallur-Pulithikudi	0/0	2/0	2.00
18	Vettar-Sellathur road	0/0	3/0	3.00
19	Akkarakottagam-Santhanallur road	0/0	4/0	4.00
20	Mannukkundan village road	0/0	3/2	2.20
24	Thrumakottai-Melantham road	0/0	4/0	4.00
25	Alathur-Uttiyani road	0/0	6/0	6.00
26	Thenparai road	0/0	5/2	5.20
28	Villur-Paayakottai Parasapuram road	0/0	5/2	5.20
	at hankottagam road	0/0	5/2	5.23

LIST OF MOTORABLE AND UNMOTORABLE ROAD—*cont.*

Serial number.	*Name of the Roads*	*Starting.*	*Ending.*	*Total.*
(1)	(2)	(3)	(4)	(5)
25	Thatchanavayal-Radhanariamanapuram road	0/0	2/8	2.80
26	Paingattur road	0/0	2/4	2.40
27	Orathur road	0/0	1/6	1.60
28	Therkunanalur-116 Kulamanickam road	0/0	5/2	5.20
29	Karuppukilar road	0/0	1/6	1.60
30	Karithidal-Kummitthidal	0/0	2/0	2.00

	Name of Road.	*Length road.*	*Remarks.*
	(2)	(3)	(4)
1	Mangudi Kamalapuram road	2.40	
2	Thinnavarayanallur-Athur Road	4.40	
3	Naramangalam-Thappalan Puliyur Road	4.80	
4	Road 30 Pulivalam	3.60	
5	Kattar bridge-Kaliyamnadevi Road	3.20	
7	Solagannor to Alinnor Road	1.40	
8	Kallikudi to Odachery Road	1.60	
9	Athipuliyur to Sengamangalam	0.80	
10	Vagaloor Vadamaruthan Road	3.20	
11	Road No. 10 Palur	3.20	
13	Pattivaramangalam Palayakula Road	3.80	
14	Eluvadi-Sivananad a Road	3.70	
15	Alivalam	0.80	
17	Mangudi Railway Road	0.40	
18	Kadur to 8	....	
19	Road No. 10 Mangudi Road	1.60	
20	Polangudi Village Road	1.60	
21	Kaduvangudi Village Road	3.60	
22	Road No. 10 to	1.60	
23	Road No. 10 Mylapore	1.60	
24	Namasivayapuram Pudur Road	1.60	
25	Thiru palli Mukkadal Road	0.80	
26	Thiyanapuram Road	1.60	
27	Umamaheswarampuram Road	1.60	
29	Velangudi Road	0.40	
30	Marukathur Village Road	1.60	
31	Kothangudi-Boothamangalacheri Road	0.80	
33	Thandali-Ammaiyappan Road	0.80	
34	Thevarkandanallur-Pichiman Road	0.80	

LIST OF ROADS IN VELLVELAN PANCHAYAT UNION NAGAPATTINAM TALUK.

Serial number.	*Name of the Road.*	*Length Road.*	*Remarks.*
(1)	(2)	(3)	(4)
1	Kilvelur-Alayeru-Thirukkangudi Road	3.4	
2	Thiruppur-Sambinathan	4.8	
3	Anadnakudi-Valivalam	2.4	
4	Andagudi-Valivalam	4.8	
5	Kilvelur-Palayavelan Road	4.0	
6	Kilveluru-Palayavelan Road	60 Km.	
7	Andakudi-Nagalore	3.2 Km.	
8	Andagudi-Thirupacnaharam	3.0 Km.	
9	Mangudi-Nagalore Rinathabore	13.6	
10	Vadakalathur-Papakoil Road	2.2 Km.	
11	Vadakari-Vadakku Road	1.5 Km.	
12	Vangaramando-Thiapillai Sethi Road	1.2 Km.	
13	Vadakarai-South H.C. Road	0.2 Km.	
14	Thenkarai-East	0.2 Km.	
15	Malari-Road	0.2 Km.	
16	Panandoppu Hc. Road	0.2 Km.	
17	Thandam Hc. Road	0.2 Km.	
18	Moolakollai Hc. Road	0.2 Km.	
19	Pokalakudi HC Road	0.2 Km.	
20	Vedahur Elakkal Road	1.00	
21	Vengidugal Sembunari Road	0.8 Km.	
22	Kadambanur HC Road	0.4	
23	Karumangudi Poolangudi Road	0.8 Km.	
24	Athur Sebinanthan Road	0.2 Km.	
25	Alluppur-Vathi Road	0.4	
26	Athur Illupur-Vathi Road	0.4	
37	Kakkalandi-64 Manalur	0.6	
28	Kadambagudi and Nakkudi Road	0.8	
29	Eatgiruppur C Road	0.2	
30	Sigar-Nathikundan Karalandan Road	0.0	
31	Keumani-Keelabavata	10.0	
		71.8 Km.	

Panchayat roads.

1	Vengidanga 1 Kilage	0.6	
2	Vadakari Kilage road	0.6	
3	Lerugadamana Santhaikali	2.0	
4	Kumangudi Vadakkuveli Road	1.2	
5	Kumangudi Neelppadi Road	1.6	
7	Koothur Athur Road	2.4	

Serial number.	Name of the Road.	Total on Kms.	Remarks.
(1)	(2)	(3)	(4)
8	Rathamangalam	1.4	
9	Radamangalam-Alangudi Road	0.8	
11	Melakumanai-Keelkaveri Road	0.8	
12	Anakkudi-Village	4.0	
13	Randalakudi-Sembaimadevei Road	0.4	
14	Vandialur-Peruncheri Road	0.8	
15	Nagalore-Village Road	1.6	
16	Sigar Mudithalam Road	1.0	
17	Mudithalaim-Karalanden	2.4	
18	Kovilakainaper-Keela Karubur Road	1.0	
19	Kovilakainaper-Panaiyur Road	1.8	
20	Kadambagudi Village Road	2.9	
21	Valivalan-Kodilathur Road	2.0	
22	Attipuliyur-Semangalam Road	1.6	
23	Thirukkaragudi-Mudaliyur Road	0.6	
24	Kuthur-Kurukkatty Road	0.4	
25	Kengidangalam-Vadaldom Road	0.4	
26	Kaikeli-Papakoil Road	2.2	
	Total	41.2	

List of Panchayat Union roads in Nannilam Union :—

1	Nannilam-Manandakudi Road	3.00	
2	Virkudy-Valkudi Road	1.6	
3	Mannangudi-Polakudi Road	3.2	
4	Paralan-Anniyur Road	2.4	
5	Pavatakudi-Athur Road	5.2	
6	Manavalampettai-Alangudi Road	2.4	
7	Ingikudi-Kothargudi Road	3.6	
8	Srivangyma Semmangudi Road	2.8	
9	Karungudam-Thalyyur Road	3.8	
10	Kudikondan-Alankudi Road	2.0	
11	Pangudi Village Road	100	

Available Highways Roads for planting in Kumbakonam :—

1	Kumbakonam-Karaikkal Road—		
	K. M. 7/0—12/0	5.0 Kms.	
	K. M. 13/0—16/0	3.0 Kms.	
2	Kumbakonam-Sirkali Road—		
	K. M. 3/0—10/0	7.0 Kms.	
	K. M. 11/0—12/0	1.0 Kms.	
	K. M. 15/0—16/8	1·8 Kms.	

Serial number.	*Name of the Road.*	*Total in Kms.*	*Remarks.*
(1)	(2(	(3)	(4)
8	Madras-Kumbakonam-Thanjavur Road—		
	K. M. 258/0—263/0	5 Kms.	
	K. M. 264/0—268/0	4.0 Kms.	
		26.8 Kms.	

VALANGAIMAN PANCHAYAT UNION ROAD 82-83—

Serial number.	*Name of the Road.*	*Length Road.*	*Remarks.*
(1)	(2)	(3)	(4)
1	Narkkudi Manickamangalam Road 0/0—4/8	4.8	
2	Alangudi-Saranathan Road 0/0—4/8	4.00	
3	Chandrasekarapuram-Hardivuramangalam Road 0/0—0/4	8.80	
4	Udayamadhanpuram-Modavalamcheri Road 2/6—4/8	2.20	
5	Mathagaram-Sothamangalam Road 0/0—2/4	2.40	
6	Manickkamangalam-Vadampoor	2.60	
7	Rajdendanallur-Mathur Kandiayur Road	6.00	
8	Pulvanthanam-Sathanoor-Thenguvalaveeli Road	3.80	
9	Papgudi-Korthanoor-Thenguvalveeli Road	3.20	
10	Andankoil-Sithavalur Road	8.00	
11	Maruvathur-Veltahuoor Road	1.2	
12	Edayaroopur-Munigar Manavi	6.40	

Thiruvidaimaruthur Panchayat Union : Road—

Serial number.	*Name of the Road.*	*Total in kms.*	*Remarks.*
(1)	(2)	(3)	
1	Thiruvidaimaruthur to Thandathotheru Road	4.8	
2	Kothur-Keeranur-Seemangudi Road	4.8	
3	Narasingpettia-Sathanur Road	3.0	
4	Nadar-Pithagaram Thukkachi Road	4.6	
5	Nachiyar Koil-Enuallur Road	3.6	
6	Thiuvisalur-Veppathur Road	3.2	
7	Ayyakudi-Pondareegapuram Road	2.0	
8	Thiruburvanam-Thiruvisalur Road	1.2	
9	Pangai village Road	2.0	
10	Krishnapuram Road	2.2	
11	Thirumeignam Parthicheri Road	3.0	
12	Pudu-Sathanur Road	5.0	
13	Aduthurai-Manjamalli Road	3.6	
14	East Veppathur Road	1.0	
15	East Veppathur Road	1.3	

Thiruvidai Marudur Panchayat Union—cont.

Serial number. (1)	*Name of the Road.* (2)	*Total in Kms.* (3)	*Remarks.* (4)
16	Karkadeswar Koil Road	1.4	
17	Parapadi Road	1.2	
18	Ichilillai Road	1.5	
19	Velangudi Road	1.3	
20	Nealayappanallur Sivapuram Krishnapuram Road	3.6	
21	Keelvaisalur-Narsingapetai	1.0	
22	Thirualalaiarajpuram	2.0	
23	Keelamarthuvukudi Road	1.6	
24	Thandathu burial ground Road	1·6	
25	Veedapakraru Road	2.0	
26	Needu Nagar Road	2.0	
	Total	77.3	

Kumbakonam Range—

Highways Road	26.8	
Valangaiman Union	55.8	
Thiruvidaimaruthur Union	77.3	
	15.99 Km.	

List of Highways Roads in Sirkali Range.

Serial number. (1)	*Name of the Road.* (2)	*Total in Kms.* (3)	*Remarks.* (4)
	Sirkali Division.—		
1	Kumbakonam— Sirkali	20.8	
2	Vaitheeswarankoil— Thirupanandal	7.0	
3	Sirkali— Thirumullaivasal	13.4	
4	Sirkali— Panangathangudi	9.8	
5	Akkur— Sirkali	10.0	
6	Sattanathapuram— Thiruvengadu	12.2	
7	Kaviripoompattinam— Grand Anicut	9.2	
8	Anaikrachatram— Mahendrapalli	11.2	
9	Puthu— Pudupattinam	15.2	
10	Pudupattinam— Madavamedu	3.0	
12	Mangaimadam— Thirunagari	4.8	
13	Udayapatti— Madhanam	5.4	
14	Thirumullaivasal— Kilyar	5.6	
15	Ayyavayanar Left	8.2	
16	Edamalai— Nallur	11.6	
17	Vaitheeswarankoil— Arasu	6.0	
18	Kondathur— Pagasalai	7.2	
19	Thandavankulam— Periyavaguppu	1 6	
20	Mangaimadam— Perunthottam	3.2	

Mayuram Division.

Serial number.	Name of the Road.	Total in Km.	Remarks.
(1)	(2)	(3)	(4)
1	Kumbakonam– Sirkali	28.4	
2	Mailaduthurai– Muthupet	10.4	
3	Tranqubar– Mailaduthurai	29.6	
4	Tranqubar– Karaikal	3.0	
5	Kumbakonam– Karaikal	7.0	
6	Kuttalam– Pandanallur	5.8	
7	Vaitheeswarankoil– Thirupanandal	12.6	
8	Grand Anaicut– Kaviripoompattinam	10.4	
9	Mayiladuthurai– Pattavarthi	13.0	
10	Kuttalam– Komal	10.0	
11	Akkar– Sirkali	7.0	
12	Grand Anicut– Kaviripoompattinam	15.6	
13	Tranqubar– Nanganallur	7.6	
14	Tranqubar– Nanganallur	15.0	
15	Tranqubar– Nanganallur	14.0	
16	Sembanarkoil– Nalladai	12.4	
17	Mannampandal– Vadakarai	3.4	
18	Ananthapuram– Village Road	3.4	
19	Konerirajapuram– Village Road	3.4	
20	Kidaranknan– Sembaneskoil	4.8	
21	Kilinaru Village Road	5.0	
22	Jurichi Village Road	4.9	
23	Akkur– Mukkuthur Sinnangudi Road	6.4	
24	Nappagudga– Kadalangudi	15.8	
25	Therlandur– Thiruvaduthurai	8.8	
26	Thillaiyadi– Kattucheri	3.2	
27	Perumali– Thillaiyadi Thirukadayur Road	11.6	
28	Ayyavinayagar Left Bank Road	3.2	
29	Memtahu– Uthirankudi	8.0	

Sirkali Division.

Serial number.	Name of the Road.	Total in Km.	Remarks.
(1)	(2)	(3)	(4)
1	Thennalkudi—Vaitheeswarankoil	5.0	
2	Thiruvenkadu—Neithavasal	4.0	
3	Redhanallur Road	4.6	
4	Annakoil—Nangour	5.0	
5	Mangaimadam—Thennampattinam	4.0	
6	Elayamankudam	5.0	
7	Perumangalam	1.6	
8	Kanniyakudi	1.6	

Sirkali Division—cont.

Serial number.	Name of the Road.	Total.	Remarks.
(1)	(2)	(3)	(4)
9	Vanakiric	4.0	
10	Kanniyakudi Road	1'6	
11	Enalludi—Pattivilagam	4.0	
12	Tittai Road	2.4	
13	Nangur—Allivilagam	4.0	
14	Vaitheeswarankoil—Maruvathur	1.4	
15	Thiruvali—Karamedi	3.0	
16	Thiruvali—Karamedi	1.4	
17	Thiruvenkadu—Chinnaperuthootum	2.0	
18	Kaviripoompattinam—Neithavasal	2.0	
19	Thillaiviadangam—Thiruthoni	2.0	
20	Konaiampattinam—Keelamoverkarai	2.0	
21	Namali—Alanjeri	2.0	
23	Pattivilagam—Arasur	2.0	
24	Perumpalla—Kondal	3.0	
25	Thittai—Vellapallam	3.0	
26	Kathiruppu—Sembaodai	2.0	
27	Varavukudi—Alangeri	2.0	
28	Senthangudi—Puduratti	3.0	
29	Maruvathur—Kumarantham	3.0	
30	Melpatti—Colony Maruvathur	6.0	
31	Attaikulam—Neikuppai	2.8	
32	Ouduthurai—Vellappalla	3.0	
33	Vedaranyapuram—Konakombu	3.0	
34	Perunthottum—Agarapothottuam	3.0	
35	Mukkudam—Narayanapuram	2.0	
36	Manikiramam—Sambakkathalai	2.0	
37	Themnapattinam—Mathampattinam—Kilamavurkarai	3.0	
38	Sattanathapuram—Panamangalam	3.0	

Panchayat Union Roads—Coleroon.

Serial number.	Name of the Road.	Total.	Remarks.
1	Arasur—Kilamotheer	4.8	
2	Kannukinyarkoil—Nallanayagapuram	4.6	
3	Nallanayagapuram—Koolaiyurar	2.0	
4	Madirvelur—Vedanegam	5.6	
5	Puthur—Kannam Road	2.6	
6	Kunnam—Vedapangam	3.6	
7	Rasur—Kuthiampettari	2.4	
8	Mudaliamadi—Nanapadugai	2.6	
9	Kilakoil—Sialam	3.6	

Panchayat Union Roads Coleroon—cont.

Serial number.	Name of the Road.	Total.	Remarks.
(1)	(2)	(3)	(4)
12	Anundapuram Road	1.8	
13	Puliandurai	2.4	
13	Alakkudi—Kodandapuram	2.0	
17	Achalpuram—Madaram	4.2	
18	Arasur—Pachapeurmanallur	4.0	
19	Mahendrapalli—Kattur	5.2	
20	Vettangudi—Kulaiyur	5.2	
22	Periakuppam—Panangudi	3.2	
23	Nallnayagapuram Road	2.4	
24	Arpakkam—Edavangudi	3.6	
	Panchayat Union—Mayiladuthurai.		
1	Ananathavapuram Railway Station Road	6.8	
2	Nallathukudi Village Road	3.2	
3	Arulozhithevan Village Road	4.0	
4	Tharampuram Village Road	3.8	
5	Serytiyam	2.4	
6	Mariyuar	2.4	
7	Paraslaur	2.2	
8	Manalur	2.4	
9	Albagudi—Aruzhthevan	2.0	
10	Ponmansanallur Village Road	2.8	
11	Melananallur	2.8	
12	Panduikorka	2.0	
13	Sethur Pommsanallur	3.2	
14	Kidathalamedu Poyyakudi	2.4	
15	Vadvanji Soliankuttam	6.0	
16	Thiruchitrambal Udayar Road	2.5	
17	Naramangalam Village Road	4.8	
18	Nagangudi Village Road	2.4	
19	Manalur Village Road	3.0	
20	Mulapakkam	3.2	
21	Korkai	2.4	
22	Varadampattu	2.4	
23	Sembacheri—Thirumangalam	2.0	
24	Patakudi Village Road	3.4	
	Panchayat Union Roads Kuttalam.		
1	Kola—Kangatha Uram	6.1	
2	Kilavali Union Road	3.0	
3	Nagambedi Road	2.4	
4	Valuvar—Poovalur Road	2.4	
5	Perambur—Sellar	2.4	

Serial number	Name of the Road.	Total.	Remarks.
(1)	(2)	(3)	(4)
6	Perambalur—Sellar	2.4	
7	Kalainivasak Union Road	3.0	
8	Thiruvalangadu—Oaduur Road	3.2	
9	Kilianan—Kadazhi	4.0	
10	Kadakkam—Narasinga	3.2	
11	Makkiriamnagalam Old Cuddalore Road	2.0	
12	Manthai—Karuppur Road	2.2	
13	Thirumangeri Road	3.0	
14	Vikkiraman Right Bank Road	3.0	
15	Mebbiraimangalam—Manthai	2.2	
16	Thirumangalam—Athur	2.5	
17	Kiliyanur—Elumangalur	2.0	
18	Elumangalur—Kothamangudi	5.0	
19	Elumangalur—Kothamangudi	7.2	
20	Perambur—Manganallur	2.2	
23	Koma—Sembiamkomal	2.2	
24	Kadakkam—Soliampattinam	2.2	
25	Kadivai West Colony	2.2	
26	Kodavilarcheri—Chittriambarlam	3.0	
28	Kadalazhi—South Street	2.2	
29	Konerirajapuram West Karnagam Road	3.4	
30	Vaigal—Manganallur	2.2	
31	Arivalur—Velur Road	6.4	
32	Kiliyanur—Velur Road	3.4	
33	Pervaur—Karuppur	2.2	
34	Karuppur—Thiruvaduthurai	2.2	
35	Marampalli—Kudalur	2.0	
36	Nagambadi—Nallathur	3.6	
37	Valuvur—Angeesalai	2.2	
38	Asikkpadu—Mallial Road	2.2	
	Panchayat Union Sembanar.		
1	Thirumauriyur—Alaveli Semangalam	3.2	
2	Natham—Kanjaragaram	3.6	
3	Arupathi—Melaiyur	2.0	
4	Mudikondanallur—Kilayur	4.6	
5	Kalambathipuram—Mathar	5.0	
6	Thirukkadayur—Kannangudi Kiliyanallur Road	4.4	
7	Manickapangu—Tranqubar Roard	5.6	
8	Akkur—Marudampallam	5.6	
10	Melaperumballam—Kilaperumpallam	4.8	
11	Vallam—Pudur Village	4.0	

Serial number.	Name of the Road.	Total.	Remarks.
(1)	(2)	(3)	(4)
12	Thirukkalarcheri—Palur	3.2	
13	Eduthukatti Road	2.0	
14	Parasalur—Eaniyaur	5.6	
15	Eluppur—Hariharan	5.6	
16	Eluppur—Nalladai—Vilagam	2.4	
17	Kadali—Narasinganathan	2.6	
18	Semangalam—Kuthur Olaiyaru Puthur	2.6	
19	Akkur—Mathur Road	2.6	
20	Thirukkadayur—Seidaithamnai	2.2	
21	Kalamanallur—Marudampallam	3.2	
22	Onerirajapuram Village Road	2.2	
23	Plugamangalam—Thillaiyadi	2.4	
24	Chandapapi Village Road	2.6	
25	Vailsur Village Road	3.8	
26	Sendamangalam Village Road	2.6	
27	Kilamanthur Village Road	2.4	
28	Annavasal—Vadakarai	2.2	
29	Umayalapuram Village Road	2.4	

APPENDIX VIII.

STATEMENT SHOWING THE FOREST OFFENCES AND COMPOUND FEES REALISED IN THANJAVUR FOREST DIVISION FROM 1973-74 TO 1981-82. (UPTO JANUARY).

Year.	Nature of offences. Illicit felling.	Grazing.	Other offences.	Total.	Compounding fees realised.	Remarks.
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1970-71	..	..	..	..	..	
1971-72	..	..	..	..	..	
1972-73	..	..	..	..	..	
1973-74	141	35	20	196	2,358.00	
1974-75	146	25	18	189	2,225.00	
1975-76	132	40	15	187	5,882.00	
1976-77	121	17	72	210	7,278.00	
1977-78	211	28	16	255	9,061.00	Including two sandal cases.
1978-79	201	34	26	261	19,601.00	
1979-80	196	14	7	217	4,171.99	
1980-81	155	6	..	161	6,470.00	
1981-82	353	52	90	494	12,219.00	
1982-83	213	15	60	238	6,115.00	
1983-84 (Upto January 1983).	28	2	13	43	795.00	

APPENDIX IX.

STATEMENT SHOWING THE GRAZING REVENUE REALISED ON THE GRAZING INCIDENCE OF THANJAVUR FOREST DIVISION.

Serial number.	Year.	Grazing Revenue realised.	No. of units for which permit issued.	Area opened for grazing in hectares.	Area closed for grazing in hectares.	Grazing incidence per cow unit in hectares.
(1)	(2)	(3) RS.	(4)	(5)	(6)	(7)
1	1970-71	2,405.00	..	..	..	..
2	1971-72	4,321.00	..	42.4115 Sq. Km.	13.1918 Sq. Km.	..
3	1972-73	4,037.00	4,037	146.31 Sq. Km.	34.17 Sq. Km.	3.62
4	1973-74	3,599.00	3,599	..	21.52 Sq. Km.	..
5	1974-75	1,805.00	..	..	..	..
6	1975-76	2,705.00	2,880.5	161.3061 Sq. Km.	10.0166 Sq. Km.	5.6
7	1976-77	1,319.00	..	..	..	..
8	1977-78	1,265.00	1,197.00	38,31 Sq. Km.	122.9946 Sq.	3.2
9	1978-79	1,943.00	971.5	4,252 Ha.	15125.48 Ha.	1.55
10	1980-81	1,922.00	959	1,275.53 Ha.	15125.43 Ha.	1.33
11	1981-82	4,986.00	2,116	14,605.59 Ha.	1795.51 Ha.	6.9

APPENDIX X.

STATEMENT SHOWING THE AREA OF MANNGROVE COUPES FELLED AND AVENUE REALISED FROM 1970-71 TO 1974-75 IN THANJAVUR DIVISION.

Year.	Name of Series.							
	Tamarankottai.				Muthupet.			
	Coupe number.	Area in ha.	Yield in tonnes.	Amount.	Coupe number.	Area in ha.	Yield in tonnes.	Amount
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1970-71	XI	40.79	297 00	4,150.00	..	..	..	..
1971-72	XII	39.41	209 00	3,200.00	..	..	..	..
1972-73	..	..	..	..	..	..	..	..
1973-74	XIII	37.90	328.00	8,010.00	..	..	..	..
					I	25.96	100.00	3,400.00
					II	33.45	324.00	10,800.00
1975-76	Till to date all the Mangrove coupe leases were stopped on the mangrove Revserves were declared as a Nature Reserve in Chief Conservator of Forest No. R. Dis. 19032/73 K4, dated 13th March 1975 and further working of the coupes have been stopped.							

APPENDIX XI.

STATEMENT SHOWING THE AREA OF CASUARINA COUPES FELLED AND REVENUE REALISED FROM 1970-71 TO 1981-82 IN THANJAVUR FOREST DIVISION.

Year	Name of the Series and Range.								
	No. I Range Thanjavur.			No. IV Range Sirkali.					
	Vedugagudi.			Muthalaimadu.			Sodiakudi.		
	Area in ha.	Yield in ton.	Amount Rs.	Area in ha.	Yield in ton.	Amount Rs.	Area in ha.	Yield in ton.	Amount Rs.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1970-71	..	..	..	6.72	217	50,505.00	6.4	145½	20,005.00
1971-72	..	..	..	..	..	..	..	..	..
1972-73	..	..	..	..	..	..	..	..	..
1973-74	..	..	..	..	..	..	..	..	..
1974-75	..	..	..	..	..	..	..	..	..
1975-76	..	..	..	..	205 trees	520-00	..	..	..
1976-77	..	..	..	13.33	250½	11,045.00	..	..	..
1977-78	..	..	..	..	..	..	..	..	..
1978-79	..	..	..	..	..	..	..	..	..

1979-80	..	..	..	10.20	114.0	1,200.00	13.0	$142\frac{1}{2}$	49,500.00	..	..	..
1980-81	..	..	..	12.00	675 trees $2\frac{1}{4}$ ton milar $6\frac{1}{2}$ c/2 to flood relief works.							
1981 82	..	..	..	..	..	..	..	..	..	..	..	..

Year.			Name of the series and Range.								
			No. IV Range Sirkali.								
			Sodiakudi Bit I.			Sodiakudi Bit II			Sodiakudi Bit III.		
			Area in ha.	*Yield in ton.*	*Amount in Rs.*	*Area in ha.*	*Yield in ton.*	*Amount in Rs.*	*Area in ha.*	*Yield in ton.*	*Amount in Rs.*
(1)			(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
1970-71	..	..	..	..	..	..	..	..	..	..	..
1971-72	..	..	10.43	119	11,800.00	5.38	100	2,725.00	15.5	150	9,735.00
1972-73	..	..	..	..	..	..	..	..	..	..	..
1973-74	..	..	..	..	..	..	..	..	..	..	..
1974-75	..	..	..	..	..	..	..	..	..	..	..
1975-76	..	..	..	..	..	..	..	..	..	..	..
1976-77	..	..	..	..	..	..	..	..	..	..	..
1977-78	..	..	..	..	..	..	..	..	..	..	..
1978-79	..	..	..	..	..	..	..	..	..	..	..
1979-80	..	..	..	..	..	..	..	..	..	..	..
1980-81	..	..		..	..	..	..	..	..	..	..
1981-82	..	..	..	..	..	..	..	..	..	..	..

APPENDIX XI—*cont.*

Year.	Name of the Series and Range. — No. IV Range Sirkali. — Pudupattinam. Area in ha.	Pudupattinam. Yield in ton.	Pudupattinam. Amount in Rs.	Pudupattinam Bit I and II. Area in ha.	Pudupattinam Bit I and II. Yield in ton.	Pudupattinam Bit I and II. Amount in Rs.	Mudalimadu Bit I and II. Area in ha.	Mudalimadu Bit I and II. Yiel in ton.	Mudalimadu Bit I and II. Amount in Rs.
(1)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)
1970-71	27.39	303½	85,005.00	..	..	..	..	..	..
1971-72	..	..	..	..	..	..	..	..	..
1972-73	..	..	..	14.68	376	43,560.00	6.7	6.5	22,020.00
1973-74	..	..	..	..	..	..	..	..	..
1974-75	..	..	..	..	..	..	..	..	..
1975-76	40 dead trees 9.10	1½ 63	455.00 44,530.00	..	..	..	..	..	..
1976-77	3.36	244½	17,005.00	..	..	..	..	..	..
1977-78	..	..	..	..	..	..	..	..	..
1978-79	54.39	17,149½	1,53,100.00	..	..	..	6.4 Bit I.	147½	24,850.00
1979-80	..	..	..	29.60	1,017	3,77,200.00	..	..	..
1980-81	..	..	..	..	..	..	..	..	..
1981-82	..	..	..	..	..	..	..	..	..

Year.	Name of the Series and Range. No. IV Range Sirkaly. Mudalaimadu Bit II. Area in ha.	Mudalaimadu Bit II. Yield in ton.	Mudalaimadu Bit II. Amount Rs.	Pudupattinam Bit III. Area in ha.	Pudupattinam Bit III. Yield in ton.	Pudupattinam Bit III. Amount Rs.	Pudupattinam IV. Area in ha.	Pudupattinam IV. Yield in ton.	Pudupattinam IV. Amount Rs.
(1)	(29)	(30)	(31)	(32)	(33)	(34)	(35)	(36)	(37)
1970-71	..	..	..	..	..	..	..	..	..
1971-72	..	..	..	..	..	..	..	..	..
1972-73	6.19	62.5	18,005.00	..	..	..	..	..	..
1973-74	..	..	..	..	..	..	..	..	..
1974-75	..	..	..	12.27	5½	2,2,100.00	3.85	135	16,190.00
1975-76	..	..	..	..	..	..	..	..	..
1976-77	..	..	..	..	..	..	..	..	..
1977-78	..	..	..	..	..	..	..	..	..
1978-79	..	..	..	..	..	..	..	..	..
1979-80	..	..	..	..	..	..	..	..	..
1980-81	..	..	..	..	..	..	..	..	..
1981-82	..	..	..	..	..	..	4.00	90	15,750.00

Year.	Name of the series and range.								
	No. IV—Range Sirkali.								
	Pudupattinam Bit V.			Alakkudi Bit II.			Sodiakudi Bit IV.		
	Area in ha.	Yield in ton.	Amount Rs.	Area in ha.	Yield in ton.	Amount Rs.	Area in ha.	Yield in ton.	Amount Rs.
1970-71 ..	..	..	..	..	..	..	..	..	..
1971-72 ..	..	..	..	.	..	..	..	..	..
1972-73 ..	..	..	..	..	..	..	..	..	..
1973-74 ..	..	..	..	..	..	..	..	..	..
1974-75 ..	4.37	55	12,000.00	6.13	130	5,070.00	1,612	242	40,105
1975-76 ..	..	..	..	..	..	..	..	..	..
1976-77 ..									
1977-78 .. 1978-79 .. 1980-81 ..	..	..	..	..	..	..	..	..	..
1981-82 ..	12.27	100	190,75.00	..	..	..	..	..	..

Year.	Name of the series and range.								
	No. of IV—Range Sirkali.								
	Sodikudi Bit V.			Pudupattinam Bit VI.			Pudupattinam Bit VII.		
	Area in ha.	Yield in ton.	Amount. Rs.	Area in ha.	Yield in ton.	Amount Rs.	Area in ha.	Yield in ton.	Amount Rs.
1970-71 .. 1971-72 .. 1972-73 .. 1973-74 ..	..	..	..	..	..	..	..	..	..
1974-75 ..	9.17	110	21,060	17.76	263½	40,110.00	6.26	169	11,100.00
1975-76 .. 1976-77 .. 1977-78 .. 1978-79 .. 1980-81 ..	..	..	..	..	..	..	..	..	..
1981-82 ..									

APPENDIX XI—*cont.*

Year.	Name of the series and range.					
	No. IV-Range Sitkali.					
	Mudaliu medu Bit III.			Alakkudi.		
	Area in ha.	Yield in ton.	Amount Rs.	Area in ha.	Yield in ton.	Amount Rs.
1970-71						
1971-72						
1972-73	..	..	..	..	..	..
1973-74						
1974-75	16.56	109	39,105.00	..	..	..
1975-76	..	..	..	8.8	87 trees Babul and Casuarina.	8,205.00
1976-77						
1977-78						
1978-79						
1979-80	..	..	..	..	..	
1980-81						
1981-82						

Year.		Name of the series and page.								
		No. II-Range Kumbakonam.								
		Maharajapuram Bit I.			Maharajapuram Bit II.			Maharajapuram Bit III.		
		Area in ha.	Yield in ton.	Amount Rs,	Area in ha.	Yield in ton.	Amount Rs.	Area in ha.	Yield in ton.	Amount Rs.
1970-71	..	9.35	90	8,001.00	3.74	56	5,201.00	..	..	..
1971-72	..									
1972-73	..	..	..	..	..	..	..	..	..	..
1973-74	..									
1974-75	..	..	..	..	..	..	..	19.94	186	20,660.00
1975-76		..	..	..	..	..	..	..	..	..
1976-77	..									
1977-78	..	15.67	445½	56,205.00	17.00	302	47,620	..		..
1978-79	..	..	..	..	..	..	..	..		..
1979-80	..	..	..	..	6.9	46	9,190.00	16.40	101	17,100.00
1980-81	..	..	..		..	..	..	..	..	..
1981-82	..									

APPENDIX XI—*cont.*

Year.	*Name of the series and range.* No. II-Range Kumbakonam. Maharajapuram Range. *Area in ha.*	*Yield in ton.*	*Amount Rs.*	Pattukkottai Range. *Area in ha.*	*Yield in ton.*	*Amount Rs.*
1970-71	..	..	..	..	..	..
1971-72	..	..	..	4.5	39H/L	2,010.00
1972-73	..	..	..	..	..	..
1973-74	..	..	..	..	..	..
1974-75	..	..	3,525.00	15.91	212	23,010.00
1975-76	17.23	388	37,375.00	..	..	..
1976-77	..	..	..	..	..	..
1977-78	..	..	..	..	..	..
1978-79	36.00	426	56,705.00	..	..	..
1979-80	..	..	..	..	..	..
1980-82	..	..	..	..	..	..

APPENDIX XII.

LIST OF FOREST OFFICERS WHO HELD CHARGE OF THE THANJAVUR FOREST.

FOREST DIVISION.

From 1971.

Serial number. (1)	*Name of the Officer.* (2)	*From.* (3)	*To.* (4)	*Remarks.* (5)
1	Thiru S. Sivasailam I.F.S.,	23rd November 1971	24th January 1972	Additional charge.
2	Thiru A. Justus B.A.,	25th January 1972	18th September 1972	
3	Thiru C. Thankaiah	18th September 1972	23rd April 1973	
4	Thiru P. Palsamy	24th April 1973	3rd May 1973	
5	Thiru C. Thankaiah	5th May 1973	3rd December 1973	
6	Thiru T. K. Rajagopalan I.F.S.,	6th June 1975	17th November 1975	
7	Thiru W. P. Durairaj	18th November 1975	2nd December 1975	Additional charge.
8	Thiru T. K. Rajagopalan I.F.S.,	3rd December 1975	11th May 1976	
9	Thiru A. Md. Zackriah, I.F.S.	11th May 1976	3rd June 1976	
10	Thiru P. Soundarapandian	4th June 1976	3rd June 1979	
11	Thiru M. Rameshan, I.F.S.	4th June 1979	27th October 1979	
12	Thiru N. Vasudevan	28th October 1979	11th November 1979	Additional charge.
13	Thiru M. Rameshan I.F.S.	12th November 1979	7th December 1979	
14	Thiru N. Vasudevan	7th December 1979	7th February 1980	
15	Thiru V. Ganesan	8th February 1980	15th October 1980	
16	Thiru N. Vasudevan	16th October 1980	31st October 1980	Additional charge.
17	Thiru V. Ganesan	1st November 1980	23rd June 1982	
18	Thiru K. Veeramani	23rd June 1982	12th July 1982	Additional charge.
19	Thiru K. R. Ramanathan I.F.S.	12th July 1982	Till date.	

APPENDIX XIII
(Paragraph 437).

LIST OF TEAK AVENUE PLANTATIONS IN THANJAVUR FOREST DIVISION.

(a) Thanjavur Range from 1956 to 1982.

Serial number.	*Year of plantation.*	*Name of the river.*	*LB or RB*	*Distance* From	*Distance* To	*Extent in hectares.*	*Percentage of plantations.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
							PER CENT.	
1	1956	.. Vennar	LB	28-6	34-4	25.07	30	..
2	1957	.. Vennar	LB	32-50	45-0	69.29	15	..
3	1957	.. Vettar	RB	28-0 37-2 37-4	45-0 45-0 45-4	..	..	..
3	1958	.. Vennar	LB LB RB	40-3 45.0 45-0	41-4 55-0 53-6	78.51	20	..
		Vadavar	LB	0-50	5-65			
4	1959	.. Vennar	LB	55-0	58-1	44.92	35	..
		Vettar	LB RB	53-4 59-4	53-4 63-4	62.33	35	..
5	1959	.. Vadavar	LB LB	7-80 58-1	10-83 67-5			
	1960	.. Vennar	RB	55-0	67-4			
	1960	.. Vettar	LB	63-3	66-1			
6		Solasudamaniar canal ..	LB RB LB RB	62-7 63-0 7-0 7-2 73-5 72-6	66-0 63-2 7-5 7-5 74-5 75-2	63.13		
		Odambogiyur	LB	74-0	74-4			
		Common canal	RB RB	0-0 0-3	2-0 1-2			
		Solasudamaniar	RB	67-5 68-0	69-5 69-5			
		Pandavaiyar	LB	60-5 69-2	75-3 92-0	64.75		
8	963	.. Petharasana	LB	71-6	72-3	64.75	57	.
		Solasudamaniar	LB RB	69-6 71-2	74-3 73-5			
		Pandavaiyar	LB RB	68-1 68-6	70-5 68-7			
9	1964	.. Velappar	LB RB	69-5 69-1	72-0 71-7			
		Vennar	RB	68-0	69-4			
		Velliayar	LB RB	69-3 69-3	74-6 73-6	97.13	60	..
10	1965	.. Pandavaiyar	LB RB	76-6 76-1	78-7 76-4			
		Velappar	RB LB LB RB	78-0 68-7 72-0 72-3	78-7 69-3 72-6 75	64.75	68	..
11	1966	.. Odambogiyar	LB RB	78-3 78-0	84-3 84-6			
		Velappar	LB RB	73-5 73-6	76-7 76-5	80.94	35	..

Serial number.	Year of plantation.	Name of the river.	L.B. or RB.	Distance. From	Distance. To	Extent in hectares.	Percentage of plantations.	Remarks.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
12	1967	Vellappar	LB	77-0	79-5			
			RB	78-7	79-6			
		Sikkal	RB	0-0	1-2	82.56	70	..
		Vettar	LB	80-3	82-3			
			RB	80-3	82-3			
	1967	Palayavalam	RB	81-0	81-4			
	1967	Odambogiyar	LB	85-2	90-2			
			RB	85-3	90-1			
		Palayanar channal	..	0-0	1-0			
13	1968	Velappar	LB	82-0	80-4			
			RB	82-6	86-4			
		Pandavaiyar	LB	68-7	84-4			
			RB	68-7	84-4			
		Southrajan	RB	0-0	1-1	3.37	75	
		Pichakalayar	RB	0-0	0-2			
		Idayar	..	0-0	0-2			
14	1969	Vettar	LB	91-4	92-3			
			RB	91-4	93-6			
		Velappar	LB	86-4	89-3	80.94	60	
			RB	86-4	89-3			
15	1970	Vettar	LB	85-0	91-4			
			RB	85-0	91-4	76	80	
		Kattar	LB	89-4	89-6			
		Koduvaiyar	RB	79-4	87-6			
16	1971	Valliyar	Both banks	81-4	83-4	30,00	65	..
17	1971	Vettar	Do	85-7	90-3	30.00	70	..
18	1972	Velliar	Do	83-4	85-7	60.00	65	..
19	1972	Vettar	LB	83-4	85-7			
			RB	83-2	85-7	60.00	65	..
			LB	86-1	86-4			
			RB	87-5	87-7			
20	1973	Valvaikal	Both banks	78-4	82-0			
		Kraiyar	Do	2-2	5-2	60.00	50	..
21	1973	Velliar	LB	85-7	90-4			
			RB	85-7	91-0	90.00	50	..
22	1974	Sittar	Both	6-1	8-4	60.00	50	..
		Devanathi	Do.	0-1	5-4			
23	1974	Pandavaiyar	Do.	84-4	89-3	60,00	65	..
24	1974	Pillaivaikal, Puthar channel	Both	2-1	4-5	64.00	60	..
25	1974	Regunatha Cauvery	Both	5-0	10-0	60.00	55	..
26	1975	Vettar Chari	Do.	0-5	5-80	60.00	70	..
27	1975	Pillaivaikal	Do.	0-0	7-0	60.00	60	..
28	1975	Sithar Devanathi	Do.	1-5	5-2	40.00	65	..
29	1975	Velliar	Do.	79-0	81-4	20.00	55	..
30	1976	Vettar				24.00	70	..
31	1976	Chandranathi	Do.	1-0	10.0	90.00	5	..

Serial number.	Year of plantation.	Name of the river.	L. B. or R.	Distance. From.	Distance. To.	Extent in hectares.	Percentage of stocking.	Remarks.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
		THANJAVUR RANGE—cont.						
32	1976	.. Konakaduvu	Both	10-0	15-0	72.00	50	..
33	1976	.. Puthar	Do.	0-5	3-8	42.00	50	..
34	1976	.. Vennar	Do.	82-0	86-0	78.00	55	..
35	1977	.. Samantha Cauvary ..	Do.	0-0	3-0	60·00	50	..
36	1977	.. Koraivakal	Do.			60.00	50	..
37	1977	.. Jambu cauvery	Do,	6-0	8-0	42.00	50	..
38	1978	.. Neivasal Thenpathi	Do.	0-0	5-35	72.00	66	..
39	1978	.. Kongan Vaikkal ..	Do.	0 0	8-0	60.00	50	..
40	1978	.. Pullambadi	Do.	44-2	46-5	42.00	50	..
41	1978	.. Colleroon	RB	48-0	53-0	10.00	50	..
42	1979	.. Konakudangu	Do.	0-0	6-0	24.00	20	..
43	1979	.. Ananthan Cauvery ..	Do	6-0	8-0	24.00	75	..
44	1979	.. Kallperambur Eri	Do.			24.00	70	..
45	1979	.. Grand anicut	Do.	6-20	9-50	91	70	..
46	1979	.. Pullambadi	Do.	43-0	52-0	24.00	70	..
47	1980	.. Mariammankoil Eri ..	Do.			60.00	65	..
48	1980	.. Sakkaravaikkal	Do.	0-0 0-0 0-0 0-0 0-0	1-75 0-25 0-25 0-15 0-50	25	60	..
49	1980	.. Kallaperambur Eri ..				24.00	70	..
50	1980	.. Kattalai high level channel ..	Both	79-0	85-0	74.00	65	..
51	1980	.. Grand anicut channel ..	Do.	9-50	12-80	90	70	..
52	1981	Vennar	D0	6-0	6·0	30	65	..
53	1981	.. Vadavar	Do.	8·30	10·42	62	60	..
54	1981	.. Neivasal	Do.	0-0	1-0	30	70	..
55	1981	.. Kagireri	Do.			24	75	..
56	1982	.. Anantha Cauvery	Do.		4-3	30	75	..
57	1982	.. Kulamangalam	Do.		0.25	1·00	30	..
58	1982	.. Sullnarar	Do.	0-0	3-0	30	70	
59	1982	.. Sullanar, Bit II		3-0	6-0	30	75	..

LIST OF TEAK AVENUE PLANTATIONS IN THANJAVUR FOREST DIVISION.

(*From* 1957 *to* 1982).

Serial number.	*Year.*	*Name of river.*	*RB to LB.*	*Distance.* *From*	*To*	*Exten in hectares.*	*Percentage plantation.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
			(*b*) KUMBAKONAM RANGE.					PER CENT
1	1957	Cauvery	LB	17-4	20			
			LB	22-2	23-4			
			RB	17-3	24-5			
		Vennar	LB	17-3	2-33		55.24	30
		Kodamurity	RB	30-1	33-5			
2	1958	Cauvery	LB	39-7	48-1			
			RB	37-2	48-3			
		Kodamurity	LB	37-2	43-2			
			LB	46-0	48-1			
			LB	54-0	57-1			
			RB	40-0	47-2			
		Arasalar	RB	46-2	47-2		..	30
3	1959	Kudamurity	LB	50-7	512		71.23	
			LB	57-2	59-2			
			LB	50-0	58-7			
		Mudikondan	LB	54-7	60-0		2.80	40
			RB	54-0	60-0			
		Cauvery	LB	48-5	52-7			
			RB	53-4	65-6			
		Arasalar	RB	53-5	55-0			
		Thirumalai Rajan	LB	55-0	56-0			
4	1960	Kudamurity	LB	59-0	63-1			
			RB	59-1	62-5			
		Thirumalaiarajan	LB	57-0	59-5			
			RB	55-1	59-2			
		Kudikonan	LB	60-1	62-2		51.51	43
			RB	61-2	62-3			
		Cauvery	LB	54-2	56-4			
			LB	57-7	59-7			
			RB	58-4	60-2			
5	1961	Arasalar	LB	62-0	65-5			
				62-0	66-5			
		Thirumalairaja	LB	59-4	66-0		58.27	50
				59-5	62-5			
6	1962	Kudikondan	RB	62-2	67-4			
			LB	62-6	67-1		64.75	50
		Arasalar	RB	69-7	72-2			
			LB	66-5	72-3			
7	1963	Kudamurity	RB	63-7	66-3			
			LB	63-1	65-0			
		Thirumalairajan	RB	66-3	69-3			
			LB	66-2	69-3		64.75	55
		Kudamurity alias Puthuar	LB	65-0	65-0			
8	1964	Arasalar	RB	86-1	77-0			
			RB	7-7	9-1			
			LB	76-1	80-0		66.36	55
		Puthar	RB	66-4	68-2			
			RB	68-5	70-3			
			LB	65-5	67-7			

Serial number.	Year of plantation.	Name of the river.	LB or RB	Distance From.	Distance To	Extent in hectares.	Percentage of plantations.	Remarks.

KUMBAKONAM RANGE

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8) PERCENT	(9)
9	1965	[illegible]	RB LB	70-2 69-0	73-5 70-6	77.70	60	..
		Boo[illegible]	LB RB	72-0 76-2 76-4	73-33 75-4 80-7			
10	1966	Arasalar	LB RB	80-7 80-6	86-0 86-0	80.94	65	..
11	1967	Mudikondan	RB RB	68-0 67-7	80-4 80-4	80.94	80	..
12	1968	Thirumalairajan	RB LB	74-4 75-0	77-4 78-4	105.72	72	..
13	1969	Nattar	RB LB	67-7 77-2	77-1 79-5			
		Vanjiar (Common)		75-5	79-0			
		Mudikondan		80-5	87-4			
		Narimaniyar	LB	3-3	5-3			
14	1970	Vanjiar	LB	79-0	82-2			
		Moottar	LB	83-0	86-4	80.94	78	..
15	1971	Vagiyar	Both banks	81 1 81-1	84-1 84-6	40	60	..
16	1971	Manniyar	Do.	45-5 45-5	52-6 52-6	40	40	..
17	1973	Nandalar Bit I	Do.	0-2 0-2	5-67 5-67	60	60	..
18	1972	Nandalar Unit I	Do.	8-4 8-4	15-1 15-1	60	50	..
19	1973	Nandalaur Unit I	Do.	5-6 5-6	8-4 8-4	16	50	..
20	1973	Nandalar Bit II	Do.	15-1 15-1	22-0 22-0	28	50	..
21	1973	Mottaiyar	Do.	2-0 6-0	6-0 7-0	52	45	..
22	1974	Mottaiyar	Do.	6-0 6-0	7-0 7-0	24	45	..
23	1974	Palavar	Do.	0-0 0-0	6-0 6-0	60	40	..
24	1974	Nattar	Do.	85-0 85-0	86-4 86-4	20	45	..
25	1974	Idayar Bit I	Do.	0-0 0-0	204 2-4	44	40	..
26	1974	Idayar Bit II	Do.	2-4 2-4	5-0 5-0	40	45	..
27	1975	Puthar (North)	Do.	83-7 83-7	90-1 90-1	6[illegible]	56	..
28	1975	Puthar (South)	Do.	83-7 83-7	90-1 90-1	60	60	..
29	1975	Puthar (South)	Do.	83-7 83-7	88-0 88-0	0	40	..
30	1976	Puthar (North)	Do.	74-0 74-0	83-7 83-7	90	60	..

Serial number.	Year of plantation.	Name of the river.	LB or RB	Distance From.	Distance To	Extent in hectares.	Percentage of plantations.	Remarks.
(1)	(2)	(3)	(4)	(5)	(6)			
31	1976	Vadakorniyur	Both banks	1-4 1-4	7-1 7-1	60	[illegible]	
32	1977	Aliyanar	Do.	Full	Full	60	50	..
33	1977	Narimaniyar	Do.	1-0	4-4	42	50	
34	1977	Kabisalar	Do.	1-0 1-0	6-2 6-2	60	45	
35	1977	Koraiyar	Do.	0.4	5-4	..	40	
36	1977	Parisal Pokki	Do.	0-4 full	5-4 full	..	40	
37	1977	Pudumanir	Do.	..	24	..	40	
38	1977	Sullanar	Do.	..	12	..	35	
39	1978	Biman Vaikkal	Do.	3-0 3-0	7-6 7-6	42	40	
40	1978	Koduvayar	Do.	85-7 88-0	85-0 88-1	60	60	
41	1978	Manalar	Do.	1-0 1-0	4-0 4-0	42	60	..
42	1978	Thirumairajan	Do.	78-4 78-4	81-0 81-0	..	50	..
43	1979	Thiruchankattankudi	Do.	0-0	7-0	30	55	..
44	1979	Kattar	Do.	79-4 79-4	89-0 89-0	..	50	..
45	1979	Senmudiran	Do.	0-0- 0-0	6-0 6-0	60	60	
46	1979	Kandian Palavar	Do.	0-0	3-0	54	60	..
		Raman Odai Ammaiappar Voikkal	Do.	0-0 63-4	3-0 60-0			
47	1979	Kottur	Do.	0-0 0-0	4-0 4-0	60	50	..
48	1980	Thenkoraiyar	Do.	3-0 3-0	7-0 7-0	42	60	..
49	1980 1960	Odambokiar (Gap)	Do.	82-3 78-3 82-7	84-7 78-6 84-7	42	20	..
50	1980	Vettar	Do.	76-2 75-2 74-0	77-0 76-0 75-2	..	40	..
51	1981	Pandavayar	Do.	74-4 74-4	74-42 78-0	48	75	..
52	1981	Vettar	Do.	..	..	..	..	..
53	1981	Seemanvoikkal Otti viokkal	Do. Do.	.. ..	.. ..	.. 48	.. 70	.. ..
54	1981	Kangayan Palavar	Do.	0-0	5-0	54	80	..
55	1982	Pandavayar	Do.	76-0 76-0	79-6 79-6	60	90	..
56	1982	Konavikal	Do.	4-0 4-0	8-0 8-0	42	85	..
57	1982	Manniyar	Do.	56-0 56-0	60-0 60-0	..	90	raised by Social Forestry
58	1982	Kadavanikari	6.4 Km.	0.0 0.0	6-4 6-4 in Kms.		90	..
59	1982	Cauvery	6.4 Km.	63-2	67-2	..	..	..
60	1982	Devarayampet	5.5 Km			..	9	..

LIST OF TEAK AVENUE PLANTATION RAISED IN THANJAVUR DIVISION FROM 1956—77.

Serial number.	Year.	Name of the River	R.B. or L.B.	Distance. From	To	Extent in ha.	Percentage of plantation	Remarks
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
							PERCENTAGE	
C. TIRUCHIRAPPALLI RANGE. —								
1	1956	Cauvery	R.B.	27-0	29-1	10.11	10	..
2	1957	Cauvery	R.B. L.B.	22-7 to 15-2 to	36-0 21-1	92.26	4	..
3	1958	Coleroon	R.B.	9-2	14-5	27.31	15	..
4	1959	Cauvery Coleroon	L.B.	9-3 to 0-6 to	17-0 17-0	116.33	6	..
5	1960	New Kattalai HL. Channel common.		19-6 to	39-6	92.27	85	..
6	1961	Do.	R.B. R.B.	24-5 to 24-5 to 24-5 to	39-5 38-0 25-6	92.27	85	..
7	1962	Do.	Do.	17-6 to 17-3 to	19-6 24-1	66.37	85	..
8	1963	Do.	Do.	16-6 to 16-6 to 16-6 to	17.3 17-3 17-6	64.76	12	..
9	1964	Do.	R.B. L.B.	2-1 to 2-1 to	17-3 17-3	97.12	40	..
10	1965	Cauvery	R.B.	7-4 to	11-2	30.76	15	..
11	1966	Cauvery	L.B.	8-5 to	14-7	80.94	65	..
12	1967	Do.	L.B.	24-0 to	25-2	71.22	80	..
13	1969	Coleroon	R.B.	21-0 to	29-2	48.52	85	..
14	1970	Nyyakondan channel Coleroon	R.B.	3-0 to 29-2 to	9-6 33.0	90.00	80	..
15	1971	Coleroon	....	31-3 to	33-3	50.00	55	..
16	1972	Coleroon	R.B.	33-7 to	37-3	50.00	55	..
17	1976	Do.	L.B.	48-0 to	53-3	10.00	60	..
18	1974	Thuraiyur	....	0-0 to	7-00	64.00	55	..
19	1975	Punavasal	....	0-0 to	7-00	60.00	60	..
20	1975	Nadupadugai	....	..	..	20.00	15	..
21	1976	Sordiar	..	..	..	30.00	45	..
22	1976	Melapunavasal	..	7-0 to	10-0	36.00	10	..
23	1976	Kothadi Channel	..	..	..	30.00	40	..
24	1976	Pedupadugai	..	..	..	48.00	60	..
25	1977	Puduchatram	..	..	..	30.00	55	..
26	1977	Kodumbiranvari	..	0-0 to	1-00	36.00	50	..
27	1977	Nadupadugai	..	..	..	48.00	60	..

LIST OF TEAK AVENUE PLANTATION RAISED IN THANJAVUR DIVISION DURING 1956—82.

Serial number.	Year of pl ntation.	Name of the river.	LB or RB	Distance From	Distance To	Extent in hectares.	Percentage of plantations.	Rem rks
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
							PERCENTAGE	
. SIRKALI RANGE :—								
1	1956	Grand Anicut	R.B.	5-95	7-00	10.72	20	..
2	1957	Do.	R.B.	7-00	14-35			
			L.B.	7-00	14-35	60.90	27	..
						7.78	20	..
3	1957	Ananda Cauvery	R.B.	0-00	4-30	..	..	..
4	1958	Grand Anicut Canal	R.B.	14-35	19-30			
				14-35	19-20	44.50	30	..
5	1958	Kalyanaodai	R.B.	0-00	4-20	38.95	40	..
				0-00	4-20			
6	1959	Grand Anicut Canal	R.B.	19-25	22-5			
			L.B.	23-60	28-10			
			L.B.	19-25	22-85	64.75	45	..
			L.B.	23-60	28-10			
7	1960	Do.	L.B.	28-10	35-85	..	..	..
			L.B.	28-10	35-85	..	..	..
			R.B.	0-00	1-20	..	..	..
		Rajamadam Canal	R.B.	0-00	3-20	64.75	50	..
			L.B.	0-00	3-00			
8	1961	Cauvery	R.B.	0-00	..	..	..	..
				60-2	64-2			
9	1962	Manniar	R.B.	60-0	64-2	64.75	65	..
			L.B.	60-0	64-2			
10	1963	Southrajan	R.B.	68-0	71-6	..	..	..
			L.B.	68-0	71-6			
11	1964	Manniar	R.B.	64-3	72-0	..	..	..
			L.B.	66-4	72-0			
		Colercon right bank	R.B.	71-1	75-0	..	..	..
		Mumkumanniyar	L.B.	0-0	8-0	97.10	70	..
			L.B.	0-0	8-0			
12	1965	Manniar	R.B.	72-0	76-4	64.75	60	..
			L.B.	72-0	76-4			
	1965	Ayyavaiyanar	R.B.	2-4	7-0	..	..	..
			L.B.	2-4	7-0			
13	1966	Manniar	R.B.	76-4	79-2	80.93	70	..
			L.B.	76-4	79-2			
		Ayyaviyanaru	R.B.	7-0	11-0	..	..	..
				7-0	11-0			
		Cauvery	R.B.	89-0	90-7	..	..	..
			L.B.	89-0	90-7			
14	1967	Cauvery	R.B.	90-7	93-4	90.64	50	..
			L.B.	90-7	93-4			
		South rajan	R.B.	7-16	75-2	..	..	..
			L.B.	71-6	76-2	..	..	..
		Odayar	R.B.	0-0	4-7	..	..	..
			L.B.	0-0	4-7			
15	1968	Manjalar	R.B.	69-0	73-0	101.16	70	..
				69-0	73-0			
		Mahimalaiar	R.B.	69-0	81-0	101.17	60	..
				69-0	81-0			
		Mahimalavar	R.B.	80-0	86-7	..	..	
				81-0	87-7			

Serial number.	Years of plantation.	Name of the river.	LB or RB	Distance From	Distance To	Extent in hectares.	Percentage of plantations.	Remarks
(1)	(2)	(3)	(4)	(5)	(6)	7	(8)	(9)
							PER CENT.	
16	1969	Manjalar	Both	74-0	80-7		..	..
17	1970	Cauvery Vikaramananan Ayyaviyanar	R.B. L.B. R.B. L.B. R.B.	73-0 73-0 8-0 0-0 8-0 0-0	76-0 76-0 9-0 9-0 2-4 2-4	59.88 ..	70	.. .. ..
18	1971	Govindacauvery	Both	0-0 to	6-4	45	65	..
19	1971	Thirunagari	Do.	0-0	6-0	35	70	..
20	1972	Manjalar	Do.	79-4	92-0	65	65	..
21	1972	Pudumaniyar	Do.	12-0	17-0	..	70	..
22	1973	Coleroon	LB	68-3	72-4	60	40	..
23	1973	Palavar	Both banks	6.1.2. to	12-0	52	58	..
24	1973	Mahimalayar	Do.	85-7 to	89-0	40	65	
25	1974	Mahimalayar	Do.	89/0	91/0	..	65	..
26	1974	Manjalar	Do.	86-7	88-3	24	65	..
27	1974	Palavar Bit I	Do.	12-0	19-0	70	20	..
28	1974	Palavar Bit II	Do.	19-0	25-1	70	28	
29	1975	Palavar Bit II	Do.	3-2	35-0	40	45	..
30	1975	Palavar Bit II	Do.	30-2	35-0	40	60	..
31	1975	Rajendran channel	Do.	3-0	8-0	40	60	..
32	1976	Nandodiayar	Do.	0-0	5-0	85	26	..
33	1976	Nandodiayar	Do.	0-0	4-0	35	75	..
34	1977	Thirunagari Bit I	Do.	6-0	9-0	40	75	..
35	1977	Thirunagari Bit II	Do.	9-0	13-4	60	75	..
36	1977	Uppanar	Do.	13-4	..	60	60	..
37	1977	South Rajan	Do.	90-0	97-0	..	60	..
38	1978	Manikaraniyar	Do.	0-0 to	5-0	60	65	..
39	1978	Alingiar	Do.	0-0 to	3-0	40	50	..
40	1978	Manikaraniyar	Do.	5-2	7-6	30	..	..
41	1979	D. Manniar	Do.	0-0 to	5-0	30	70	..
42	1979	Poraiviakkal	Do,	1-0	10-0	60	70	.
43	1980	Kakkiyar	Do.	0-0	5-0	43	65	..
44	1980	Poovendran	Do.	10	9-0	72	65	..
45	1981	Kondathur Maniviakkal	Do.	..	..	60	85	..
46	1981	Kondathur vaikkal	Do.	..	..		80	..
47	1981	Aruppakkam Alankadu Umayalpathi.	Do.	..	..	72	75	..
48	1981	Aruppakkam Alankadu Umayalpathi Bit II.	Do.	..	..	54	60	
49	1982	Athukudi Periavikkal, Mudavanvaikkal	Do.	..	..	54	80	..
	1982	Kankayam Gopalasamudram Vaikkal.	Do.	..	..	52	65	..
							1,720	

LIST OF TEAK AVENUE PLANTATION RAISED IN THANJAVUR DIVISION DURING 1959 TO 1982

i) Mannargudi Range :—

Serial number.	*Year of pl ntation.*	*Name of the river.*	*LB or RB*	*Distance* From	To	*Extent in hectares.*	*Percentage of plantations.*	*Remarks*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
							PER CENT.	
1	1959	Old Vadavar	RB	0-0	0-70	64.75	..	..
		Vadavar	RB	19-83	13-40	..	37	..
		Ext. Canal Mannargudi Manichannel	RB	0-00	4-55	..	..	..
		No 7 cannel	RB	0,00	0-70	..	..	..
2	1960	Vadavar Extra canal	RB	13-40	14-72	..	..	..
			RB	0-05	5.95	64-75		
3	1961	Paminiar	LB	60-0	63-0		..	..
			RB	60-0	69-0	..	..	..
			RB	63-0	69-4	64.75	30	..
4	1962	Paminiar	RB.	71-0	74-4	..	..	..
				73-0	74-4	64.75	70	..
5	1963	Koraiyar	LB	82-0	83-5	59.90	..	..
6	1964	Paminiar	RB	74-4	79-3	..	..	..
				74-4	76-1	97.13	60	..
7	1965	Adappar	Do.	80-7	82-7	64.75	55	..
8	1965	Mulliyar	Do.	81-2	86-2	..	..	..
9	1966	Ayyanar		76-0	79-6	80.94	75	..
10	1967	Mulliayar	Do.	78-2	81-1	..	..	..
				86-2	89-7	..	..	..
11	1968	Harichandra	Do.	87-6	92-6	140.00	80	..
12	1969	Harichandra Puluvanar	Do.	0-00	3-11	106.85	80	..
13	1970	Avenue plantation along the banks of Adappar Bit II.	Both banks	93-0	95-0	60	45	..
14	1971	Avenue plantation along the banks of Adappar Bit I.	Do.	82-1	86-0	50	65	..
15	1972	Avenue plantation along the banks of Marakka Koraiyar.	Do.	0-0	6-0	50	30	..
16	1973	Palayar main channel	Do.	1-20	3-70	60	60	..
17	1973	Vettacheri main channel	Do.	2-0	6-6	60	45	..
18	1975	Koraiyar	Do.	79-5	82-0	40	55	..
19	1976	Saluvanaru	Do.	5-2	6-5	42	35	..
20	1976	Kanna au	Do.	1-00	15-00	..	30	..
21	1977	Koraiyar	Do.	86-1	89-4	108	..	
22	1977	Adiveeranamanar	Do.	0-0 to	3-3	60	..	..
23	1977	Nattuvoikkal	Do.	0-0	2-3	42	..	..
24	1978	Nattuvoikkal	Do.	3-0	7-0	36	..	..
25	1978	Moovanallur channel	Do.	0-0	5-0	43	..	..
26	1978	Palayapandiar	Do.	3-0	5-0	42	..	..
27	1979	Mulliayar Gap	Do.	76-0	77-6	30	..	..
28	1980	Maharajapuram main channel	Do.	0-0	3-0	42	50	..
29	1980	Koraiyar	Do.	91-0	93-5	102	78	..
30	1981	Vadavar extension channel Gap	Do.	0-00	1-30	30	60	..
31	1980	Koraiyar (Gap)	Do.	65-0	69-5	66	85	..
32	1981	Koraiyar (Gap)	Do.	74-4	89-1	42	65	..

Serial number.	Year of plantation.	Name of plantation.	R.B. or L.B.	Distance. From.	Distance. To.	Extent.	Percentae.	Remarks
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Mannargudi Range—contd.								
33	1981	TMS II Paminiyar (Gap)	Both banks.	74-4	79-1	30	65	..
34	1981	Vadavar Exten.	Do.	..	..	30	80	..
35	1981	Koraiyar		96-6	97-7	30	90	..
36	1982	Illupadi voikkal		0-00	0-70	30	90	..
37	1982	Old Vadavar		0-00	0-70	30	90	..
38	1982	Thenparai voikkal		4-8	9-4	30	90	..

LIST OF TEAK AVENUE PLANTATION RAISED BY THANJAVUR DIVISION DURING 1971-82.

Serial number.	Year of plantation.	Name of plantation.	R.B. or L.B.	From.	To.	Extent.	Percentae.	Remarks
Pattukkottai Range—								
1		Kalyana odai	Both banks	6-90	8-85	80	50	..
2	1974	Vadakadu	Do.	0-00	2-50	60	25	..
3	1978	Kalayana Odai	Do.	9-00	0-25	30	50	..
4	1979	Do.	Do.	0-25	2-40	30	19	..
5	1979	Grand Anicut (Gap)	Do.	23-20 to	33-80	25	20	..
6	1980	Kalyana Odai	Do.	2-40	3-70	42	12	..
7	1980	Pudupattinam	Do.	2-50 0-00	3-75 0-50	60 ..	53 ..	..
8	1981	Do.	Do.	1-20 0-00	2-30 0-05	..	60 ..	
9	1981	Kalyana Odai	Do.	0-45	1-95		25	
10	1981	Alivalam	Do.	0-5	3-25	..	32	
11	1981	Alivalam	Do.	0-5	3-25	..	32	
12	1982	G. A. Canal	Do.	0-10	0-75		90	..
13	1982	G. A. Channel	Do.	0-00	0-50		95	..
14	1982	Reguramasamudram	Do.	0-45	1-25	..	90	..

LIST OF TEAK PLANTATION RAISED IN THANJAVUR DIVISION DURING 1971-72.

Serial number.	Year of plantation.	Name of plantation.	R.B. or L.B.	From.	To.	Extent.	Percentae.	Remarks
Chidambaram Range—								
1	1982	Veeracholanar, Bit I	Both banks	78/0	81/0 78/3	60	70	..
2	1982	Veeracholanar, Bit II	Do.	87/5	90/4	60	75	..
3	1978	North Rajan L.B. only	Do.	..	..	120	..	..
4	1978	Khansahib Voikal	Do.	..	..	50	..	..
5	1978	Ariyakosty	Do.	..	..	60	..	..
6	1979	North Rajan	Do.	..	..	20	..	..
7	1980	Vadavaru	Do.	..	..	20	..	..
8	1981	Sengal Odai	Do.	..	..	72	..	..
9	1981	Vadvaru	Do.	..	..	120	..	
10	1981	Ariyagoati	Do.	..	..	50	..	..
						792Ha.		

ABSTRACT.

	HA.
1 Thanjavur	3,155.44
2 Kumbakonam	3.070.63
3 Tiruchirappalli	1,496.92
4 Sirkali	2,974.92
5 Mannargudi	3,095.91
6 Pattukottai	697.00
7 Chidambaram	792.00
Total ..	15,102 83

APPENDIX No. XIV.

LIST OF COMPACT TEAK PLANTATIONS RAISED UPTO 1983 IN THE THANJAVUR DIVISION.

A. Thanjavur Range.

Serial number.	Serial number as per the statement in the map.	Year of plantation.	Name of the locality.	Species.	Area in ha.	Percentage of stocking.	Remarks.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
						PERCENTAGE.	
			Vennar and Vettar Teak Compact.				
1	1	1956	Thenperambur R.S. 174.180 M.	Teak	8.49	70	....
2	2	1957	Vinnamangalam R.S. 167 ..	Teak Sissoo Terminalisa Tomentosa.	4.37	5	....
3	3	1957	Kalumangalam R.S. 348/1 ..	Teak	0,90	..	Failure.
4	3A	1957	Perambur II Sethi R.S. 1/1-2.2-2.	Teak	1.90	..	Do.
5	4	1957	Kallaperambur	Teak Acacia Arabica Lambo.	0.55	40	Replanted with E.H. and Bamboo during 1962.
6	4A	1957	Kailaperambur R.L. No. 2 R.S. 28-2.	Teak	1.62	25	....
7	5	1958	Tennperambur R.L. 3, R.S. 280.	Teak Sissoo Acacia.	0.67	45	....
8	6	1957	Keelathiruppanthiruthy R.S. 311.c.	Teak	0.12	..	Failure.
9	7	1957	Rajendran (R.S. 252/B)	Teak Sissoo Babul Euclhybrid Bamboo.	0.59	4	....
10	8	1957	Rajendran I R.S. 468	Teak Sissoo ..	0.83	30	....
11	9	1957	Rajendran II R.S.	Teak	0.30	..	Failure.
12	10	1957	Natathi R.L. I Hs. 238/c ..	Teak ailan thus Jasbulana.	0.05.	..	
13	11	1957	Nagathi R.L II R.S. 238 Aw/248/A1.	Termiliasa Tomentosa.	1.07	..	
14	12	1957	Nagathi R.L. 3 R.S. 238/A1 ..	Teak	0.57		....
15	12A	1957	Nagathi R.S. 238 D-1	Teak terminalia Arjuna Jambulana	0.42	..	....

APPENDIX No. XIV—

LIST OF COMPACT TEAK PLANTATIONS RAISED UPTO 1983 IN THE THANJAVUR DIVISION—*cont*

Serial number.	Serial number as per the statement in the map.	Year of plantation.	Name of the locality.	Species.	Area in ha.	Percentage of stocking.	Remarks.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
						(PERCENTAGE.)	
			A. Thanjavur Range—cont.				
			Vennar and Vettar Teak Compact.—cont.				
16	13	1957	Nagathi R.L. 4, R.S. 238/B ..	Teak Sissoo Euc. hybrid Bamboo.	0.57	15	Replanted with Bamboor duing 1964.
17	14	1957	Nagathi R.L. 5, R.S. 238 B ..	Teak	0.81	15	....
18	15	1957	Nagathi R.16. R.S. 238-C	Teak Bamboo.	0.87	20	Replanted with Bamboo during 1964.
19	16	1957	Nagathi Rl 7, R.S .238/A and 248-B.	Teak	0.67	20	....
20	17	1957	Nagathi R.L. 8, R.S. 238/A ..	Teak	0.12	20	....
21	18	1957	Nagathi R. 19, R.S. 360/14 ..	Teak Sissoo Euc. hybrid.	0.11	35	Replanted with Baoboo during 1964.
22	18A	1957	Do. ..	..	..	..	....
23	19	1957	Then perambur compact ..	..	0.46	35	....
24	20	1957	Nagathi Rajendran R.S. 410 ..	Teak Bamboo.	0.81	7	....
25	21	1957	Thenperambur R.L. II 180H ..	Teak Bamboo.	0.50	35%	....
26	22	1957	Rayandur R.S. 1/1	Teak	0.51	..	Failure.
27	23	1957	Thottakadu R.S. 282 ate II R.S. 284/2.	..	0.63	..	Highlywooded and sealed failure. plit.
28	24	1957	Velur (R.S. 10)	Teak	0.64	..	Failure.
29	25	1957	Neithalur R.S. II 7-A, 7-B ..	Teak	0.45	35	....
30	26	1958	Melathur R.S. 228 Sethi	Teak Sissoo ..	0.45	7	....
31	26A	1958	Melathur R.S. 228	Teak	0.19	..	Failure.
32	27	1958	Melathur R.S. 169	Teak	0.16	..	Failure.
33	28	1959	Mealthur R.S. 23/2	Teak Sissoo ..	0.19	25	....
34	29	1958	Viluthaiyur R.S. 1, R.S. 424, 425/6.	Teak Sissoo ..	11.34	..	Failure.
35	30	1958	Viluthaiyur R.L. 2, R.S. 440 ..	Teak Sissoo Bubul.	2.02	45	...
36	31	1958	Viluthaiyur R.L. III, Bit 1, R.S. 476.	Teak Sissoo ..	0.60	7	....
37	32	1958	Viluthaiyur R.L. III, Bit II R.L. 465.	Teak	0.26	..	Failure.
38	33	1958	Viluthaiyur R.L. 4, R.S. 473/2.	Acacia Kodukapulli.	0.33	45	..
39	34	1958	Kothankudi R.S. 137	Teak	0.11	10	....
40	35	1958	Neikunnam R.S. 14/2	Teak	0.17	..	Failure.
41	36	1958	Rajendram, R.L. II, R.S. 252B ..	Teak Sissoo.	0.58	40	....

APPENDIX No. XIV—*cont.*

LIST OF COMPACT TEAK PLANTATAIONS R[redacted]ISED UPTO 1983 IN THE THANJAVUR DIVISION—*cont.*

Serial number. (1)	Serial number, as per the state mention the m p. (2)	Year of plantation. (3)	Name of the locality. (4)	Species. (5)	Area in ha. (6)	Percentage of stooking (7)	Remarks.
42	37	1958	Melakalakudi R.S. 160	Teak	0.20	7	...
43	38	1958	Rayandur R.S. 51/1, 31/2 and 17.	Teak Sissoo ..	0.76	..	
44	39	1958	Allur I and III R.S. 351-C ..	Do.	0.75	..	....
45	40	1960	Needamangalam R.S. 197/1 ..	Teak Sissoo Bamboo.	0.72	70	....
				Vadavar Compact.			
46	1	1959	Poondi R.S. 333 c.	Teak Sissoo, Bamboo, T. Ai una and Euc. hybrid.	0.73	40	....
47	1	1959	Saliamangalam R.L. I, R.S. 385/170, 3.	Do. ..	1.98	50	....
48	3	1959	Saliamangalam R.L. II R.S. 386-C.	Do. ..	0.64	50	....
49	4	1959	Saliamangalam R.L. III R.S. 381/c.	Do. ..	1.07	50	....
50	5	1959	Thirubuvanam R.L. I, R.S. 8A ..	Do. ..	0.61	25	....
51	6	1959	Thirubuvanam R.L. II R.S. 1/1	Do. ..	0.20	25	....
52	7	1959	Kambinarnatham R.S. 4B, 1B 3A	Do. ..	8.52	60	Replanted with Sisso and Euc. hybrid during 1962 and 1963-1970.
				(*b*) *Kumbakonam Range.*			
Thiruvayur beat :							
1	1	1957	Vittalapuram	Teak	1.52	45	....
2	2	1957	Neducauvery	Teak	0.61	45	....
3	3	1957	Neducauvery	Teak, Bamboo ..	1.21	50	....
4	4	1958	Maharaiapuram 21/2	Teak	0.40	35	...
5	5		Vadakudy S.No. 12	Teak	0.61	50	....
6	6	..	Achanoor	Teak : ..	0.91	25	....
7	7	..	Vaithaiyantha Pettai 208 ..	Teak, Babul ..	1.01	30	....
8	8	1959	Perumpuliyur, S.No. 528/A 533/2.	Teak	0.77	60	....
9	9	1959	Kalyanapuram S.No. 42/ABC ..	Teak	1.41	35	....
10	10	1959	Unaapadi, S.No. 282	Teak, Bamboo ..	0.65	..	Replanted with sesbania during 1961-62, Bamboo during 1962-63.
11	2	1959	Sarukai S.No. 16/7	Teak, Bamboo ..	0.77	..	Replanted wih Bamboo during 1962.
12	3	1959	Alavandipuram	Teak, Sissoo and Bamboo.	1.42	..	Replanted with Bamboo during 1961-62.
3	4	1959	Alavandipuram, 186/2	Teak, Bamboo ..	0.24	12	....
14	5	1959	Thiruvanzhuli S.No. 29/1 ..	Teak, Euc. hybrid and Bamboo.	0.18	35	....

APPENDEX No. XIV.

List of Compact Tax Plantations Raisec upto 1983 in the Thanjavur Division—*cont.*

Serial number.	*Serial number as per the state mention the map.*	*Year of plantation.*	*Name of the locality.*	*Species.*	*Area in ha.*	*Percentage of stocking.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Thiruvayar beat—ontt							
15	6	1959	Thiruvanzhuli S.No. 285 ..	Teak, Euc.hybrid, Bamboo and Sesbania.	0.93	..	Replanted with Sesbania during 1961-62.
16	7	1959	Renganathanpuram, S.No. 24 ..	Teak, Sissoo and Bamboo.	0.40	..	Replanted with Sesbania during 1961-62.
17	8	1959	Pattesaram S.No. 302, 327 ..	Teak	0.25	15	....
18	9	1959	Nallur 37/2	Teak and Babul.	0.28	60	....
19	10	1959	Annikudi S. 12	Teak	0.50	65	....
20	11	1959	Nallur II S.No. 26/8 and 8A ..	Teak Sissoo	0.40	60	....
21	12	1960	Sarukai S.No. 216A	Teak, Bamboo ..	2.83	..	Replanted with Sesbania during 1961-62 and bamboo during 1962-63.
22	13	1960	Alavandhipuram S.No. 201 ..	Teak, Sissoo ..	0.40	..	Replanted with Bamboo during 1962-63.
Nachiarkoil beat :							
23	1	1959	Pazhavanthakattalai S. 116 ..	Teak	0.51	40	....
24	2	1961	Villia varambal-I 29 ..	Teak, Sissoo, Teak	0.26	45	....
25	3	1961	Villia varambal III	Teak	0.40	60	....
26	4	1961	Sembianvarambal	Teak, Sissoo, Babul	1.70	45	....
27	5	1961	Sembian varambal S.No. 249 ..	..	..	..	....
28	6	1961	Krishnapuram S.No. 290 ..	Teak, Sissoo	..	60	....
29	7	1961	Ennanallur 1,373	Teak, Sissoo ..	0.44	..	Replanted with bamboo during 1961-62.
30	8	1961	Ennanallur-II	Teak, Sissoo Bamboo	0.61	45	....
31	9	1961	Ennanallur-III	Do.	0.38	30	....
32	10	1961	Thandalam 250	Teak Sissoo Teak	0.01	20	....
33	11	1961	Nachiarkoil	Teak, Sissoo, Bamboo.	0.40	65	....
34	12	1961	Nachiyarkoil-II	Do.	0.28	65	....
35	1	1958	Jenampadugai S.No. 10/11 .	Teak . .	0.40	20	..
36	2	1959	Udayallur 311/12 ..	Teak, Sissoo, Bamboo.	0.81	64	....
37	3	1959	Tenampadugai R.S. 290/1 ..	Teak	0.87	35	....
38	4	1959	Patteswaram S.No. 193 and 195 ..	Teak	0.16	7	....
39	5	1959	Chandrasearapuram 30 ..	Teak, Sissoo ..	0.26	25	....
40	6	1959	Thillasambur 42/1	Teak, Babul ..	0.26	50	....
41	7	1959	Thillasambur S No 159/8/193 ..	Teak, Sissoo, Babul, Mathi Bamboo.	1.06	65	....
42	8	1959	Renganathanpuram-II S.No. ..	Teak, Babul ..	0.25	60	....
43	9	1959	Renganathapuram S.No. ..	Teak, Babul, Sissoo.	0.05	60	....

APPENDIX No. XIV—*cont.*

LIST OF COMPACT TEAK PLANTATAIONS RAISED UPTO 1983 IN THE THANJAVUR DIVISION—*cont.*

Serial number.	Serial number as per the state mention the m p.	Year of plantation.	Name of the locality.	Species.	Area in ha.	Percentage of stooking	Remarks.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	
42	37	1958	Melakalakudi R.S. 160	Teak	0.20	7	.. ..
43	38	1958	Rayandur R.S. 51/1, 31/2 and 17.	Teak Sissoo ..	0.76	..	
44	39	1958	Allur I and III R.S. 351-C ..	Do.	0.75	..	
45	40	1960	Needamangalam R.S. 197/1 ..	Teak Sissoo Bamboo.	0.72	70	....
				Vadavar Compact.			
46	1	1959	Poondi R.S. 333 c.	Teak Sissoo, Bamboo, T. Ar una and Euc. hybrid.	0.73	40	....
47	1	1959	Saliamangalam R.L. I, R.S. 385/170, 3.	Do. ..	1.98	50	....
48	3	1959	Saliamangalam R.L. II R.S. 386-C.	Do. ..	0.64	50	....
49	4	1959	Saliamangalam R.L. III R.S. 381/c.	Do. ..	1.07	50	....
50	5	1959	Thirubuvanam R.L. I, R.S. 8A ..	Do. ..	0.61	25	
51	6	1959	Thirubuvanam R.L. II R.S. 1/1	Do. ..	0.20	25	....
52	7	1959	Kambinarnatham R.S. 4B, 1B 3A	Do. ..	8.52	60	Replanted with Sisso and Euc. hybrid during 1962 and 1963-1970.
				(*b*) *Kumbakonam Range.*			
Thiruvayur beat :							
1	1	1957	Vittalapuram	Teak	1.52	45	....
2	2	1957	Neducauvery	Teak	0.61	45	....
3	3	1957	Neducauvery	Teak, Bamboo ..	1.21	50	....
4	4	1958	Maharaiapuram 21/2	Teak	0.40	35	....
5	5		Vadakudy S.No. 12	Teak	0.61	50	....
6	6	..	Achanoor	Teak	0.91	25	....
7	7	..	Vaithaiyantha Pettai 208 ..	Teak, Babul ..	1.01	30	....
8	8	1959	Perumpuliyur, S.No. 528/A 533/2.	Teak	0.77	60	....
9	9	1959	Kalyanapuram S.No. 42/ABC ..	Teak	1.41	35	....
10	10	1959	Unaapadi, S.No. 282	Teak, Bamboo ..	0.65	..	Replanted with sesbania during 1961-62, Bamboo during 1962-63.
11	2	1959	Sarukai S.No. 16/7	Teak, Bamboo ..	0.77	..	Replanted wih Bamboo during 1962.
12	3	1959	Alavandipuram	Teak, Sissoo and Bamboo.	1.42	..	Replanted with Bamboo during 1961-62.
3	4	1959	Alavandipuram, 186/2 ..	Teak, Bamboo ..	0.24	12	....
14	5	1959	Thiruvanzhuli S.No. 29/1 ..	Teak, Euc. hybrid and Bamboo.	0.18	35	....

APPENDEX No. XIV.

List of Compact Tax Plantations Raisec upto 1983 in the Thanjavur Division—*cont.*

Serial dumber.	*Serial number as per the state mention the map.*	*Year of plantation.*	*Name of the locality.*	*Species.*	*Area in ha.*	*Percentage of stocking.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Thiruvayar beat—ontt							
15	6	1959	Thiruvanzhuli S.No. 285 ..	Teak, Euc.hybrid, Bamboo and Sesbania.	0.93	..	Replanted with Sesbania during 1961-62.
16	7	1959	Renganathanpuram, S.No. 24 ..	Teak, Sissoo and Bamboo.	0.40	..	Replanted with Sesbania during 1961-62.
17	8	1959	Pattesaram S.No. 302, 327 ..	Teak	0.25	15	....
18	9	1959	Nallur 37/2	Teak and Babul.	0.28	60	....
19	10	1959	Annikudi S. 12	Teak	0.50	65	....
20	11	1959	Nallur II S.No. 26/8 and 8A ..	Teak Sissoo ..	0.40	60	....
21	12	1960	Sarukai S.No. 216A	Teak, Bamboo ..	2.83	..	Replanted with Sesbania during 1961-62 a... bamboo during 1962-63.
22	13	1960	Alavandhipuram S.No. 201 ..	Teak, Sissoo ..	0.40	..	Replanted with Bamboo during 1962-63.
Nachiarkoil beat :							
23	1	1959	Pazhavanthakattalai S. 116 ..	Teak	0.51	40	....
24	2	1961	Villia varambal-I 29	Teak, Sissoo, Teak	0.26	45	....
25	3	1961	Villia varambal III	Teak	0 40	60	....
26	4	1961	Sembianvarambal	Teak, Sissoo, Babul	1 70	45	....
27	5	1961	Sembiar arambal S.No .249 ..	..	..	..	....
28	6	1961	Krishnapuram S.N .290 ..	Teak, Sissoo ..	..	60	....
29	7	1961	Ennanallur 1,373	Teak, Sissoo ..	0.44	..	Replanted with bamboo during 1961-62.
30	8	1961	Ennanallur-II	Teak, Sissoo Bamboo	0.61	45	....
31	9	1961	Ennanallur-III	Do.	0.38	30	....
32	10	1961	Thandalam 250	Teak Sissoo Teak	0.01	20	....
33	11	1961	Nachiarkoil	Teak, Sissoo, Bamboo.	0.40	65	....
34	12	1961	Nachiyarkoil-II	Do.	0.28	65	....
35	1	1958	Jenampadugai S.No .10/11 .	Teak . .	0.40	20	-
36	2	1959	Udayallur 311/12 ..	Teak, Sissoo, Bamboo.	0.81	64	....
37	3	1959	Tenampadugai R.S. 290/1 ..	Teak	0.87	35	....
38	4	1959	Patteswaram S.No 193 and 193 ..	Teak	0.16	7	....
39	5	1959	Chandrasearanpuram 30 ..	Teak, Sissoo ..	0.26	25	....
40	6	1959	Thillasambur 42/1	Teak, Babul ..	0.26	50	....
41	7	1959	Thillasambur S No 159/8/193 ..	Teak, Sissoo, Babul, Mathi Bamboo.	1.06	65	....
42	8	1959	Renganathanpuram-II S.No. ..	Teak, Babul ..	0.25	60	...
43	9	1959	Renganathapuram S.No. ..	Teak, Babul, Sissoo.	0.05	80	...

APPENDIX No. XIV—*cont.*

LIST OF COMAANY TEAK PLANTATIONS RAISED UPTO 1983 IN THE THANJAVUR DIVISION—*cont.*

Serial number.	*Serial number as per the state mention the map.*	*Year of plantation.*	*Name of the locality.*	*Species.*	*Area in ha.*	*Percentage of stocking.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Nachiar Ko'~ beat—cont.							
44	10	1959	Renganathapuram IV S.No. 53/4	Teak	0.76	55	
45	11	1959	Rengaı athapuram-V	Teak, Sissoo ..	0.25	60	
46	12	1959	Renganathapuram	Teak, Babul ..	0.47	40	..
47	13	1959	Patteswaram	Teak	0.47	45	
48	14	1959	Thenrampaduai	Teak	0.40	50	
49	15	1959	Thi laiyambur	..	..	55	
50	16	1959	Thillaiyambur	Teak	0.26	25	
51	17	1959	Thillaiyambur S.No. 263 ..	Teak, Sissoo, Bbabul,	0.58	40	
52	*Valangaiman South* :						
53	1	1958	Kavalur-I, S.No. 211Aand B ..	Teak	0.35	35	....
54	2	1958	Kavalur-II, S.No. 193 ..	Teak, Sissoo ..	0.30	7	....
54A	3	1958	Kavalur-III and IV	Teak	0.12	..	Failure.
55	4	1958	Agaramangudi S, No. 407 ..	Teak, Sissoo ..	1.37	4	
56	5	1958	Ombathuvalli R.L. 488/B ..	Teak	0.55	20	
57	6	1958	Ombathuvalli R.L.-II, 455/3 ..	Teak	0.75	20	
58	7	1958	Thiruka 455/3	Teak	0.59	10	
59	8	1958	Thirukarikaur 408/1	Teak	0.61	10	
60	9	1958	Malligaithidal 464/B	Teak, Sissoo ..	0.05		Failure.
61	10	1958	Uthukadu	Teak, Acacai ..	0.97	..	
62	11	1959	Sithanvalur R.L. I, 162/1 ..	Teak, Sissoo, Acacia.	0.49	40	....
63	12	1959	Sithanvalur R.L.-II, 161/1 ..	Teak	0.79	40	
64	13	1959	Sithanvalur R.L. 3	Teak, Sissoo, T. Arjuna.	0.75	40	
65	14	1959	Sithavalur R.L. 4 R.S. 162, 163 and 166.	Teak, Sissoo ..	1.72	49	....
66	15	1959	Mettur, R.L.-I, S.No. 314/200 ..	Teak, Sissoo, Euc. hybrid.	1.82	..	Replaced with E. Hybrid.
67	16	1960	Mathur R.L.-II	Euc Hybrid, Bamboo.	0.51	..	Replantec with Euchybrid during 1963.
68	17	1960	Kanciyar, S.No. 423B	Teak, Sissoo, Acacia Euc. Hybrid.	0.11	..	Replanted with bambcc during 1963.
69	18	1960	Kandiyar Bit-II, S.No. 432-B ..	Do. ..	1.84	..	Do.
70	19	1960	Kandiyar I. 423/B	Do. ..	1.17	..	Do
71	20	1960	Kandiyar-V 423B 415	Do. ..	0.78 0.18	..	Do.
72	21	1960	Thirukalambur S.No. 94 ..	Sissco ..	0.15	..	Failure.
73	22	1961	Pathur S.No. 117, 12. Mangudi, S.No. 121, Koradacheri.	Sissoo Teak, EH.	1.62	..	Replanted with Bamboo durin 1961?
					50.18		

APPENDIX No. XIV.

LIST OF COMPACT TEAK PLANTATIONS RAISED UPTO 1983 IN THE THANJAVUR DIVISION—*cont.*

Serial number.	*Serial number as per the state mention the map.*	*Year of plantation.*	*Name of tde lacality.*	*Species.*	*Area in ha.*	*Percentage of stocking.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
C. Tiruchiirappalli Range—						PER CENT.	
1	1	1957	Vennarpadugai	Teak	2.22	10	Now under Thanjavur Range
2		1957	Katchmangalam	Teak, Babul ..	3.21	..	Failure.
3		1957	Agarapattai	Teak, Babul ..	0.70	4	....
4		1957	Rajagiri	Teak, Babul ..	0.50	15	....
5		1957	Pudur	Do. ..	0.60	..	Failure.
6		1957	Thogur	Teak, Sissoo, Babul	..	..	Replanted with Bamboo during 1963 and 1964.
7		1957	Pathirakudi	Teak	4.86	4	....
8		1957	Mahadhveapuram	Teak	6.27	70	..
9		1957	Koilady	Teak, Babul ..	1.62	35	....
10		1958	Tiruchinam Poondi	Do. ..	1.01	8	....
				Total ..	25.67		

ABSTRACT,

1 Plantation Range I, Thanjavur	57.49
2 Plantation Range II, Kumbakonam	50.18
3 Plantation Range III, Tiruchirappalli	125.67
Total ..	133.37

APPENDIX XV.

TABLE SHOWING THE TOP HEIGHT AGAINST ALL SIZE QUALITY AND AGE FOR TEAK PLANTATION.

Age in year.	Site.	Quality.	I. 2.0.	I. 1.0.	I. 0.0.	II. 2.0.	II. 1.0.	II. 0.0.	III. 2.0.	III. 1.0.	III. 0.0.	IV. 2.0.	IV. 1.0.	IV. 0.0.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
5	..	..	12.80	11.28	10.06	10.06	8.63	7.32	7.32	6.10	6.88	4.88	3.96	3.02
6	..	..	14.32	12.50	11.28	11.28	9.75	8.23	8.23	7.01	5.79	5.79	4.67	3.53
7	..	..	15.54	13.72	12.50	12.50	10.67	9.45	0.45	7.92	6.40	6.40	4.88	3.66
8	..	..	16.76	14.94	13.41	11.58	10.06	10.06	9.53	7.01	7.01	7.01	5.49	3.96
9	..	..	17.68	15.85	14.33	14.33	12.50	10.97	10.06	9.53	7.62	7.62	5.79	4.25
10	..	..	18.90	17.07	15.24	15.25	14.41	11.58	9.75	8.23	8.23	6.40	6.40	4.57
11	..	..	19.81	17.98	16.76	16.76	14.94	12.80	12.80	10.97	9.14	9.14	7.01	4.88
12	..	..	20.73	18.59	17.67	17.68	15.54	13.41	13.41	11.58	9.45	9.45	7.32	5.49
13	..	..	21.64	19.51	17.68	15.54	13.41	13.41	11.58	9.45	9.45	7.32	7.32	5.49
14	..	..	26.56	20.42	18.29	18.29	16.15	14.02	14.02	11.89	9.75	9.75	7.92	5.79
15	..	..	23.16	21.03	18.90	18.90	16.76	14.63	14.63	12.50	10.36	10.36	8.23	5.79
16	..	..	24.08	21.64	19.51	19.51	17.37	14.94	14.94	12.80	1.67	10.67	1.53	6.10
17	..	..	24.69	22.56	20.12	20.12	17.68	15.54	15.34	13.11	10.97	10.97	8.84	6.40
18	..	..	25.30	22.16	20.73	20.73	18.29	15.86	15.85	13.72	11.28	11.28	9.14	7.01
19	..	..	25.91	23.47	21.03	21.03	21.64	16.85	16.15	14.02	11.58	11.58	9.14	7.01
20	..	..	26.52	24.08	21.64	21.64	19.20	16.76	16.76	14.33	11.88	9.45	9.45	7.01
21	..	..	27.13	24.38	21.95	21.95	19.51	17.07	17.07	14.63	12.19	12.19	9.75	7.32
22	..	..	27.43	24.99	22.56	22.56	19.81	19.81	17.37	17.37	14.94	12.50	10.06	7.62
23	..	..	28.04	25.30	22.86	22.86	20.42	17.68	17.68	15.24	12.80	12.80	10.36	7.62
24	..	..	28.33	25.91	23.16	23.16	20.73	18.29	18.29	15.54	13.11	13.11	10.67	7.92
25	..	..	28.96	26.21	23.77	23.77	21.03	18.59	15.54	13.11	13.11	10.67	10.67	8.23
26	..	..	29.26	26.52	24.08	24.08	21.34	18.90	18.90	16.15	13.72	13.72	10.97	8.23
27	..	..	29.57	27.13	24.38	24.38	21.64	19.20	19.20	16.46	13.79	13.72	10.97	3.23
28	..	..	30.18	27.48	24.69	24.69	21.95	19.51	19.51	16.76	14.02	14.02	11.28	8.85
29	..	..	30.48	27.74	24.90	24.99	22.25	19.81	19.81	17.07	14.33	14.33	11.58	8.84
30	..	..	30.78	28.04	25.30	25.30	22.56	19.81	19.81	17.07	14.33	14.33	11.58	8.84
31	..	..	31.09	28.35	25.60	22.86	20.12	20.12	17.07	17.07	14.63	14.63	11.89	9.14
	..	..	31.42	28.65	25.91	25.91	23.16	20.42	17.68	14.94	14.94	14.64	12.19	9.45

Age in year.	Site.	Quality.	I. 2.0.	I. 1.0.	I. 0.0.	II. 2.0.	II. 1.0.	II. 0.0.	III. 2.0.	III. 1.0.	III. 0.0.	IV. 2.0.	IV. 1.0.	IV. 0.0.
33	..	..	31.70	28.96	26.21	26.21	23.47	20.73	20.73	17.98	15.24	15.24	12.19	9.45
34	..	..	32.00	29.26	26.52	26.52	23.77	21.03	18.29	15.24	15.24	15.24	12.19	0.45
35	..	..	32.31	29.57	26.82	26.82	23.77	21.03	21.03	18.29	15.54	15.54	12.80	9.75
36	..	..	32.61	29.87	27.13	27.13	24.38	21.34	21.34	18.59	15.85	15.85	13.11	10.06
37	..	..	32.92	30.18	27.43	27.43	24.38	21.64	21.64	18.90	15.85	15.85	13.11	10.36
38	..	..	33.22	30.48	27.74	27.74	24.69	21.95	21.95	19.20	16.15	16.15	13.11	10.36
39	..	..	33.50	30.78	28.04	28.04	24.99	21.95	22.26	19.20	16.15	16.15	13.41	10.67
40	..	..	33.81	31.09	28.04	28.04	25.30	22.26	22.26	19.51	16.46	16.46	13.72	10.67
41	..	..	33.81	31.42	28.35	28.35	25.60	22.56	19.81	16.76	16.76	13.72	13.72	10.97
42	..	..	34.44	31.70	28.65	28.65	25.60	22.86	22.86	19.81	17.76	17.76	14.02	10.97
43	..	..	34.75	31.70	28.96	28.96	25.91	22.86	22.86	20.12	17.07	17.07	14.02	11.28
44	..	..	35.05	32.00	29.26	29.26	26.21	23.16	23.16	20.42	17.37	17.37	14.33	11.58
45	..	..	35.36	32.41	29.26	29.26	26.21	23.45	23.45	20.42	17.37	17.37	14.33	11.58
46	..	..	35.66	32.61	29.57	29.57	26.52	23.77	23.77	20.73	17.68	17.68	14·63	11.58
47	..	..	35.97	32.92	29.87	29.87	26.82	23.77	23.77	20.73	17.68	17.68	14.63	11.80
48	..	..	35.97	33.22	30.18	30.18	27.13	24.04	24.08	21.03	17.98	17.98	14.94	11.89
49	..	..	36.27	33.22	30.18	30.18	27.13	24.08	24.08	21.03	18.29	18.29	18.39	1.19
50	..	..	36.58	33.50	30.48	27.43	24.38	24.38	24.38	21.34	82.00	18.29	15.24	12.19
51	..	..	36.88	33.81	30.78	30.78	27.74	24.69	24.69	31.64	18.29	18.29	15.24	12.19
52	..	..	37.19	34.14	31.09	31.09	28.04	24.99	24.99	21.95	18.59	18.59	15.24	12.50
53	..	..	37.19	34.14	31.09	31.09	28.04	24.99	24.99	21.95	18.90	18.90	15.85	12.80
54	..	..	37.49	34.44	31.42	31.42	28.04	24.99	24.99	21.95	18.90	18.90	15.85	12.80
55	..	..	37.80	34.75	31.70	31.70	28.35	25.30	25.30	22.25	18.90	18.90	15.85	12.80
56	..	..	37.80	34.75	31.70	31.70	28.35	25.30	25.30	22.25	19.20	19.20	16.15	12.80
57	..	..	38.10	35.05	32.00	32.00	28.65	25.60	25.60	22.56	19.20	19.20	16.15	13.11
58	..	..	38.40	35.05	32.00	32.00	28.96	25.60	25.60	22.56	19.51	19.51	16.46	13.41
59	..	..	38.40	35.56	32.31	32,31	28.96	25.91	22.86	19.51	19.51	19.51	16.46	13.41
60	..	..	38·71	35.66	32,31	32.31	28.96	25.91	25,91	22.85	19,81	19.81	16.46	13.41

APPENDIX XVI.

LIST OF CASHEW PLANTATION HANDED OVER TO TAMIL NADU FOREST PLANTATION CORPORATION (TAFCORN) (342).

Serial number.	*Year.*	*Name of plantation.*	*Extent in ha.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)
1	1956–57	Neppugai	60.72	Transferred to TAFCORN as per G.O. Ms. No. 267, F & F Department, dated 3rd April 1974 communicated in Chief Conservator of Forests' Ref. No. 4342/73–J2, dated 29th April 1974.
2	1958	Komapuram	20.24	Do.
3	1958	Neppugai	20.34	Do.
4	1959	Komapuram	72.83	Do.
5	1960	Ettithalai	32.30	Do.
6	1961	Sendangudi	40.47	Do.
7	1961	Perambur	40.47	Do.
8	1962	Melpanaikadu	40.47	Do.
9	1962	Do.	10.00	Do.
10	1964	Do.	12.00	Do.
11	1964	Keeramangalam	12.14	Do.
12	1965	Do.	20.23	Do.
13	1966	Do.	20.23	Do.
14	1967	Sendamangudi	10.00	Do.
15	1967	Komapuram	40.00	Do.
16	1967	Sendangudi	74.00	Do.
17	1968	Komapuram	40.00	Do.
18	1969	Do.	60.00	Do.
19	1970	Neppugai	40.00	Do.
20	1970	Do.	40.00	Do.
21	1971	Ettithalai	40.00	Do.
22	1971	Neppugai Bit I	33.59	Do.
23	1971	Neppugai Bit II	25.50	Do.
24	1971	Neppugai Bit III	39.25	Do.
25	1972	Neppugai	16.00	Do.
26	1972	Sendangudi	19.20	Do.
27	1972	Melpanaikkadu	6.20	Do.
		Total ..	876.51	

APPENDIX NO. XVII.

INSTRUCTIONS FOR MAINTENANCE OF THE PLANTATION JOURNAL.

The instructions given at the top of the milestone chart under section I should be first studied by the Range Officer. He should carry out the various items of works as indicated in the chart. The chart should be posted as indicated in the instructions. This will help the Range Officer in timing his operations. It will also enable the inspecting officers to moniter them

(i) The entries in the journal should be posted right from the time the plantations area is surveyed and preliminary works are commenced.

(ii) All entries in the journal should be signed by the Range Officer himself with date.

(iii) No column in the journal should be left blank. If any of the columns are not applicable information is not valiable the letters N AP or N.A. respectively should entered under the relevant column.

(iv) The location sketch should be shall all details for easy identifications of the plantations. If a plantation is in two or more bits, the relative position of the bits should be shown in the sketch.

(v) The detailed sketch should be prepared on a separate tracing cloth and pasted in the journal. It should show the land marks in and around the plantations and should contain also the field books. It should also show the inspection roads and paths formed.

(vi) In section 4 the rainguage station from which rainfall figures and temperature figures were taken should be specified in the headings 'Rainfall and temperature'.

(vii) The number of man days generated can be arrived at by (1) multiplying the number of persons working per day with the number of days worked. (In the case of works done on place-work or on contract, by dividing the total wages distributed by the rates of wages distributed by the rates of wages per person per day.

NOTE—In the case of works done through contractors details should be obtained from the contractors concerned.

In section II the pay of plot watchers also should be included in the statement of costs.

(x) Details of yield and revenue obtained by departmental exploitation, also should be furnished in Section 15. The date of commencement and completion of extraction of the produce should also be furnished the particulars should include not only the major product from the plantation but also other subsidiary products like barkamagum, leaves, etc. In the case of usufructs the earwise details should be recorded.

(xi) The section 16 is an important section and difficulties encountered in raising the planting or in maintaining them should be invariably recorded by the Range Officer, The remedial measures taken should also be recorded.

All observations instructions, etc., by inspecting Officers should recorded directly in the plantation journal insection 18 the Inspecting Officer should insist on the Range Officers producing the plantation journals for recording such observation and instructions in the journal. If due to any any reasons it is not possible to make these observations in the journals directly. Inspecting notes may be drawn up and sufficient number of copies prepared and sent to the Distict Forest Offieer for pasting in the plantation journal and for pursuing action separately.

Chief Conservator of Forests.

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PLANTATION JOURNAL.

IDENTIFICATION PARTICULARPS

DIVISION :

Range Location

(I.e. name plantation)

Year

(Area in hectare)

PLANTATON JOURNAL.

2. 2. Identification particulars.

1. Division
2. Range.
3. Location.

(Name of plantation)

4. Year.
5. Area (In hectares)

3. Sketch plantation.

(i) Location sketch— **Scale :**

(*a*) District :
(*b*) Taluk
(*c*) Village.
(*d*) R. F./R. L.

4. GENERAL PARTICULARS OF AREA OF REGENERATION.

1. Division :
Ramge.
Taluk.
Village.

5. Reserved Forests/Land/Others.
6. S. I. sheet No.
7. Survey No.
8. Felling series.
9. Compt. Number.
10. Coupe Number.
11. Climate.

Month.	*Rain Total in mm.*			*Number of rainy days.*			*Temperature days maximum.*		*Minimum.*		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
January											
February											
March											
April											
May											
June											
July											
August											
September											
October											
November											
December											
Total rain											

12 topogrfl :
Aspect
Slope
P re t

5. Details of Procurement of Planting Stock (if Brought From elsewhere)

A. Name of Central Nursery from which Seedling were obtained.

Serial number.	Species.	Date of procurement.	Quantity.	Type maked seedlings or	Cost of seed and cost of planting site.	Number of transport ation to planting site.	Cost of transportation.	Employment generated man days at hours a day. Dept 11A	Employment generated man days at hours a day. Contractors.	Remarks.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)		(10)

5. B. In case nursery work is part of the planting work.

1. Name of nursery .. ..
2. Location .. ..
3. Whether private and /Reserved forests/ Land.
4. Area of nursery (Actual total area of seed beds alone).
5. Soil. .. ..
6. Rainfall during nursery periods (in mm).
   Minimum .. ..
   Maximum .. ..
7. Temperature during nursery periods in OC
   Minimum .. ..
   Maximum .. ..

6. Details of Nursery Work.

Serial number.	*Name of operation.*	*Date of Quantity (e) with specification.*	*Rate.*	*Total expenditure.*	*Employment generated Number of mandays (7-a)*	*Employment generated Number of mandays at contractors. (7-b),*	*Remarks.*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Survey and demarcation						
2	Collection of seed/Cost of seeds						
3	Clearing site						
4	Digging soil						
5	Uprooting stumps						
6	Breaking clods and forming nursery beds ..						
7	Sowing seeds						
8	Watering the mother bed						
9	Weeding						
10	Filling in containers *						
11	Sowing or transplanting in containers ..						
12	For cost of farm yard manure and good earth please see item 14.						

(6) **Details of Nursery Works**—*cont.*

Serial number.	*Name of Operations.*	*Date of Quantity (e)*	*With specification.*	*Rate*	*Total expenditure.*	*Employment generated number of Mandays at constractors (7a) (7b).*	*Remarks.*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
12	Watering the container plants	..	..	..	..	..	..
13	Shifting and grading including replacement of casualities.		..	..	..	..	..
14	Cost of farm yard manure	..	..	..	..	..	..
15	Cost of polythene bags	..	..	..	..	..	..
16	Cost of other materials	..	..	..	..	..	..
17	Pay of plot watcher, if any (preta)	..	..	..	..	..	..
18	Any other operations	..	..	..	..	..	..
	Total ..						

7. **Performance of Seeds.**

Serial number.	*Seeds.*	*Species.*	*Species.*	*Species.*	*Species.*
(1)	(2)	(3)	(4)	(5)	(6)
1	Weight of seeds unueed in Gms.	..	..	..	..
2	Number of seeds expected as per norms per 10-Gms.	..	..	..	..
3	Number of seedlings obtained per 10 Gms.	..	..	..	..

8. **Preparation Works in Regenaration Area.**

(9) *General.*

Serial number.	*Name of aperation.*	*Date.*	*Quantity of work Date (S)*	*Rate Quantity of work specificat-tion.*	*Rate*	*per total expenditure.*	*Mandays Name of operation. Mandays Generalised at 8 hours a day.* Dept. 7 (a).	Conta-ctors. 7(b).
(1)	(2)	(3)	(4)	(5)	(6)		(7)	(8)
1	Survey and demarcation	..	..	..	..			..
2	Clearfelling or clearance of site	..	..	..	..		..	..
3	Collection of stakes	..	..	..	..		..	..
4	Burning	..	..	..	..		..	..
5	Aligning and staking	..	..	..	..		..	..
6	Digging pits specify espacement	..	..	..	..		..	..
7	Any other (specify)	..	..	..	..		..	..

(2) MECHANISED OPERATION LIKE TARCTOR PLOUGHING (AREA PLOUGHED IN HA).

Serial number.	*Name of the operation.*	*Date.*	*Quantity.*	*Total expenditure.*	*Hours of work.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	Hire charges (if hired)	..	..	..	..	..
2	Departmental vehicle	..	..	..	..	..
	(1) Date/s and hours of works	..	..	..	..	..
	(2) Fuel	..	..	..	..	..
	(3) Other Oils	..	..	..	..	..
	(4) Others if any	..	..	..	..	..
3	Wages or protata pay to driver, etc.	..	..	..	..	..
4	Others (specify)	..	..	..	..	..

NOTE. Need not be filled.

9. PLANNING WORKS.

(1) Cost of seeds (of sown directly).
(2) Subsequence and cost of operation for areas other than Kumri.

Serial number.	*Name of operation.*	*Date.*	*Specifiation.*	*Rate.*		*Expenditure. Generated 8 hours a Monday.* Contrac-tors.	Dept. 7 (a).	*Remarks.*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
A.	Work done by Department or through contractors.—							
1	Planting	..	..	..	..	..	..	..
	(*a*) Transporting seedlings from nursery	..	..	..	..	..	..	..
	(*b*) Planting of casualties	..	..	..	..	..	..	..
2	Replacement of casualties	..	..	..	..	..	..	..
3	Weeding of casualties	..	..	..	..	..	..	..
	Weeding I	..	..	..	..	..	..	..
	II	..	..	..	..	..	..	..
	III	..	..	..	..	..	..	..
4	Soil working	..	..	..	..	..	..	..
5	Erecting fence (if any)	..	..	..	..	..	..	..
6	Cost of manure	..	..	..	..	..	..	..
7	Manuring I	..	..	..	..	..	..	..
	II	..	..	..	..	..	..	..
8	Cost of insectisides	..	..	..	..	..	..	..
9	Application of insectisides I	..	..	..	..	..	..	..
	II	..	..	..	..	..	..	..
10	Fire tracing	..	..	..	..	..	..	..
11	Proportionate cost on watcher's pay	..	..	..	..	..	..	..
12	Others of any	..	..	..	..	..	..	..
	Total	..	..	..	..	..	..	..
B.	Details of work done by the Kumridar for the plantation.	..	..	..	..	..	..	..
1	Do.	..	..	..	..	..	..	..
2	Do.	..	..	..	..	..	..	..
	Do.	..	..	..	..	..	..	..
	Total	..	..	..	..	..	..	..

10 *Kumri cultivation.*

Separate data for each year.

Year.	*Total area covered.*	*Revenue from Kumri lease to the dept.*	*Name of agricultural crops cultivated by kumridara**	*Area of crops*	*Estimated total cost of cultivation for agricultural crops.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)	(6)	(7)

*Indicate one below the other.

11. *Subsequent Operation (during first retain).*

(By department separate data) for each with total for each year.

Year.	*Name of Operation.*	*Date.*	*Quantity.*	*Rate.*	*Total expenditure.*	*Mandays hours a day.*		*Remarks.*
						Dept. 7-A.	*Contractors. 7-B*	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)

12. *Survivals (Yearwise).*

Serial Number.	*Name of Species.*	*Actuals planted.*		*Date of counting.*	*Survival details (special-wise).*		
		Area covered.	*No. of planted.*		*Number of Survival species wise*	*Percentage of Survivals.*	*condition of Protection.*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)

13. *Abstract of Cost.*

Cost of formation and Maintenance.

Serial number.	*Seeds.*	*Initial year cost.*	*Total of years.*	*Subsequent.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)	(6)
1	Cost of planting stock. including seeds Polythene bags etc.				
2	Cost of preparatory works.				
3	Cost of Mechanised operations				
4	Cost of transporting and planting operations, etc., in Ist year				
		———			———
		———			———

5 Cost of operations in subsequent years (till the end of rotation period).

2nd year

3rd year

4th year

5th year

6th year

7th year

8th year

9th year

10th year etc.

6 Cost of operation during 2nd rotation period.

14. *Operation after first harvest.*

Serial number.	**Details of work date.*	*Quantity specification*	*Rate.*	*Total expenditure.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)	(6)

* Includes proportionate expenditure incurred on watchers pay as separate entry.

15. *Yields and receipts by rotation wise.*

Including receipts by Intermediate yield and final harvest.

Serial number.	*Date.*	*Particulars wood, bark, laps and tops etc., may be shown separately.*	*Quantity of yield.*	*£ Amount realised.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)	(6)
I. Rotation.					
II. Rotation					
III. Rotation					

Agency of felling cost of harvesting source of supply.

16. *Bottlenecks and damages to crops.*

Difficulties noticed by Executing Officers with suggestions for improvement.

Serial number.	*Nature of bottleneck and damages caused.*	*Date on which pointed out to superior Officers.*	*Steps taken for improvement (if any).*	*Remarks.*
(1)	(2)	(3)	(4)	(5)

17. *Officers-in-charge of plantation.*

Serial number.	*Name.*	*Period.* From	To
(1)	(2)	(3)	(4)
1	Range Officer	..	.. ..
2	Foresters	..	.. ..

17. *Officers-in-charge of plantation—cont.*

Serial number.	*Name.*	*Period.* From	To
(1)	(2)	(3)	(4)
3	Forest Guard	..	.. ..
	Watcher.	..	..
	Superior Officer.	..	.. ..
1	District Forest Officers.	..	.. ..
2	Conservator of Forests.	..	.. ..

18. *Inspection Notes.*

Date.	*Inspecting Officer and designation.*	*Inspection notes and instructions.*	*Remarks about compliance where needed.*
(1)	(2)	(3)	(4)

19. *Closing the Capital Asset.*

1. Need for closing the capital asset (say at the end of rotation or loss by natural cases, etc.)

2. Whether the site was inspected by Superior officer.

3. Date and reference in which proposals were submitted.

4. Date and reference in which closure was ordered.

STANDARD MODEL ESTIMATES.

APPENDIX No. XVIII-A.

Estimate for raising Teak Nursery in Thanjavur Forest Division.

Nursery—One standard bed of 10m x 1 m x 30 cm.

Serial number.	*Quantity.*	*Particulars of work.*	*F.S.R. item.*	*Rate per*	*Amount.*	*Time Schedule.*
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	3.3M³	Clearing the Nursery site	..	M.³	..	January.
2	50 bags per bed.	Collection and transport of bags of Miscellaneous species 60 cm. in length for fixing side supports of bamboo.	..	per 100	..	February.
3	1 Bed	Fixing split bamboo supports in position with bags ..	..	1 male mazdoor for 4 bags.	..	March.
4	2 bed	Cost of farmyard manure for manuring the beds including transport charge.	..	1 cart load per bed.	..	March.
5	1 cart load of straw.	Digging earth mixing Farm yard manure forming nursery beds of 10 m x 1m x 30m with side supporting showing of seeds working for the day and covering withstraw.	..	for 40 bads	..	April.
6	1 male	Watering the beds twice a day with rose can for first 30 days	..	per bed per day.	..	April to March
7	..	Watering the beds once a day till planting	..	Should be carried out by watering mazdoors.		
8	..	Digging wells at one well per bed each of 1.50 m radious and 3 m depth.		..		
9	..	Application of pesticide to prevent pests and diseases ..	L.S.	..		April, May
10	..	Nursery watchman to project and keep the nursery in good conditions.		..		
11	..	Fencing with brush wood including collection and transport of thorns.		Per R.M.	..	April, May.
12	..	Preparing teak stumps	..	..	..	
13	..	Contingencies for unfore-seen expenditure	..	L.S.	..	

APPENDIX No. XVIII-B.

Model estimate to raising Teak plantation in Thanjavur Division.

Item number.	*Quantity.*	*Description of work.*	*F. S. R.*	*Rate per*	*Amount.*
(1)	(2)	(3)	(4)	(5)	(6)
1		Clearing the planting line to width of 1.5 m³ alround the plants by cutting through bushes and intervending growth.	..	ha.	
2	..	Aligning and stacking (or making)	..	1,000	
3	..	Preparing saucer like pits each of 60 cm. diameter and 15 cm. indepth to old one pot of water.	..	1,000	
4	..	Planting the area of teak stumps in crow bar holes at 2 cm. espacement .	..	1,000	
5	..	Watering alternate days with one pot of water for first 20 days from the date of planting.	..	1,000	
6	..	Plot mazdoor for protection watering and doing other cultural operations from the date of planting for 1,200 days.	..	1,000	
7	..	Female mazdoor to assist plot mazdoors between 1st August to 21st September and 1st January to 31st March for 142 days.	..	1,000	
8	..	Digging wells at one well 11/100 seedlings each of 1.50 radious and 2m depth.	..	each.	
9	..	Replacement of Casualities 10 per cent done by plot of mazdoors as per working plan appendix.	..	100	
10	..	Contingencies for unforseen item of expenditure	..	L.S.	
			Total ..		

APPENDIX No. XVIII-C.

Model estimate for raising Casuarina Nursery in Thanjavur Division.

Item number.	*Quantity.*	*Description of work.*	*F. S. R.*	*Rate per Amount.*	
(1)	(2)	(3)	(4)	(5)	(6)
1	..	Clearing the nursery site cutting uprooting and removing growth, etc.	..	Bed.	
2	..	Formation of germination beds by breaking clods mixing with formyard manure and earth and forming nursery beds of size 10m x 10 x 30 cm with side support sowing seeds. Watering for the day and covering with straw (Excluding the cost of manure).	..	Bed	
3	..	Cost of Farmyard manure including transport	..	L.S.	
4	..	Collection and transport of good earth		..	
5	..	Watering the germination leads with rose can gwice daily for 90 days.	..	Bed.	
6	..	Formation of sunken beds 10m x 0.3m and pricking out seedlings (a) 10cm x 10cm a part.	..	Bed.	
7	..	Fencing the nursery site to protect form the cattle		..	
8	..	Nursery watch to keep the nursery in good condition ..	..	..	
9	..	Digging of wells	..	Well	
10	..	Contingencies for the purchase of insecticides	..	L.S.	

APPENDIX No. XVIII-D.

Model Estimate for Raising Casaurina Nursery in Thanjavur Divsion

(Espasement 1m x 1m.)

(1)	(2)	(3)	(4)	(5)
1	..	Survey and demarcation by cutting 3 metre wide old lines in Reserved Forest.	..	20 M chain
2	..	Digging well at one well for acres of heactres well (size 20' diametre at the top and 10' at the bottom and 2.1m depth.	..	Wells
3	..	Kirbing with casuarina brush wood in the centre of the well to prevent altering of well.	..	Wells
4	..	Aligning and staking	..	1,000
5	..	Pulling out the seedlings from the transporting to ploughing site 10,000 to the hectare.	..	10,000
6	..	Putting 1000 pits hectare at 1,m x 1m spacing pit size 30 x 30cm (25 per cent cut in the ploughed area).	..	1 Ga.
7	..	Planting clearing pits pouring 1 plot of water pudding and again pouring 1 pot of water and the first day of planting (Planting is assumed to commerce in first only).	..	1,000
8	..	Watering ½ pot of water per plant for 25 days from the day of planting and no-rainy days at 10 female mazdoors.	..	10,000
9	..	Watering 1/3 pot of water on alternate days from 1st August to 31st December 90 days on non-rainy days.		1,000
10	..	Watering the backward plants estimated at 25 per cent of the growing stock with one pot of water once in 5 days from 1st January to 30th June.	..	10,000
11	..	Replacing casualities 25 per cent including reopening of pits ..	..	1 Ha.
12	..	Weeding and soil working twice in a year once in October another in January to a diameter of 90 cm.	..	10,000
13	..	Forming once around to protect Casuarina plantations from cattle with brushwood 1.2 metre height.	..	1 C
14	..	Pay of plot watcher from the date of completion of planting upto 30th June 1981.	..	Month.
15	..	Construction of temporary watcher shed of size 30' x 10' using departmental Bamboo including the cost of other material and Bamboo charges.	..	Each
16	..	Contingencies and other unforseen expenditure ..	..	L.S.
		Total		

APPENDIX No. XVIII-E.

Model estimate for raising Bamboo Plantation in Thanjavur Division.

Item number. (1)	Quantity. (2)	Description of work. (3)	F. S. R. (4)	Rate per (5)	Amount.
1		Clearing the planting line to a width of 1.5 M. dry cutting thorny and other growth.		ha.	
2		Aligning and fencing 5mX5m espacement		1000	
3		Digging pits 60 cm. X 60 cm. 60 cm. bits proposed rate worked out from FSR Tirchci item No. 147.	..	100	
4		Transporting Bamboos Rhymones from nursery to lorry site including to a distance of 50' to 200'.	..	100	
5		Transporting the Bamboo Rizhomes from the lorry site to the road side of the plantation (as per quotation).	..	1 Mr / 500	
6		Cost of Bamboo Rhizhomes including replacement of Casualities 10 per cent (as per quotation) from private nursery.	..	One Bamboo Rhymzonme.	
		Unloading Bamboos Rhyzones from the vehicle and transporting them from the unloading site to planting site refilling and planting.	..	100	
		Plot mazdoor for protection and other cultural operations from the date of planting (for 30 days).	..	1 m m / 1,200	
9		Female mazdoor or assist to plot mazdoor for 1st 30 days on the date of planting 20 plants.	..	100	
10		Female mazdoor to assist plot mazdoor for watering once in three days shading by cadjan leaves 2 leaves per plant.		100	
11		Expenditure for contingencies and other unforseen expenditure	..	L.S.	

APPENDIX No. XVIII-F.

MODEL ESTIMATE.

Model estimate for raising Teak and Miscellaneous strips line plantation on river and canal fringes in Tanjore Division.

Item number. (1)	Quantity. (2)	Description of work. (3)	F.S.R. (4)	Rate per (5)	Amount.
1		Clearing the planting line to a width of 1.5 cm. alround the plants by cutting thorny buses and interversing growth for teak at an espacement of 20X2m.	..	ha. of 200 plants.	
2		Clearing the planting to a width of 1.5 m. alround the plants by cutting thorny buses and inter vensing growth for miscellaneous at— 2mX2m for E.H. .. .. 1,000 3mX3m for sisoo 200 1,200	..	200 per.	
3		Aligning and marking at an espacement of 2 metres apart of planting. Teak .. .. 6,000 E.H. 1,000 7,000	..	1,000	
4		Aligning and marking at an espacement of 3 metres part plating miscellaneous container seedlings sissoo—200 Nos.	.	1,000	
5		Preparing the saucer like pits each of 60 cm. diameter and 15 cm. in depth to hold one pot of water to teak planting.	..	200	
6		Digging pits 30cm. in sandy loam soil for planting miscellaneous stripline planting	..	1,000	

Item number.	Quantity.	Description of work.	F. S. R.		Rate per	Amount.
(1)	(2)	(3)	(4)	(5)	(6)	(7)
7		Preparing the teak stumps	..	..	1,000	..
8		Planting the area with teak stumps in crobar holes at 2m. espacement	..	..	1,000	..
9		Transporting the container plants from nursery site to planting site upto a lead of 5 km. including loadin and unloading 13X25 for sissoo.	..	..	1,000	..
10		Transporting the containers plant from nursery site to planting site upto a lead of 5 km. including loading and unloading (Mis. EH 10 cm. X20 cm.)	..	..	100	..
11		Planting container plants and refilling of 30 cm. cube pits (excluding transport and distribution beyond 100 M. in plants.)	..	..	1,000	..
12		Watering on alternate days with one pot of water for first 20 days from the date of planting (12th August to 21st August It is expected that watering will be completed at the end of August for teak).	..	..	Ha.	..
13		Plot mazdoor for porection watering and doing other cultural operation from the date of planting from August to 31st March for teak days.	..	..	ha	..
14		Female mazdoor to assist plot mazdoor between August to 21st September and 1st January to 31st March for teak only days.	..	..	ha	..
15		Plot mazdoor for protecting watering and doing other cultural operation from 1st October to 31st March 90 days.	..	..	ha.	..
16		Female mazdoor to assist plot mazdoor between 1st January to 31st March 90 days.	..	..	ha.	..
17		Digging wells at two wells per hectare each of 1.5 m. radius and 2 m. depth only for teak.	..	..	Each well.	..
18		Contingencies for unforseen expenditure and purchase of insecticides, etc. m.	..	..	L.S.	..

APPENDIX No. XVIII-G.

Model estimate for raising subabul plantation.

(Espacement 2m X 2m.)

(1)	(2)	(3)	(4)	(5)	(6)	(7)
1		Survey and demarcation of boundaries lines by cutting 1.2 cm. strip and new lines	..	..	20m.	..
2		Clearing and uprooting the existing growth, light growth and cutting thorns, bushes and intervancy growth	..	..	hu.	..
3		Ploughing by departmental tractor with cultivator charge	..	..	hu.	..
4		Aligning and marking espacement of 2m X 2m.	..	..	1,000	..
5		Digging 30 cm. cube pits in ploughed area 25 per cent less than the rate allowed for ploughed area	..	..	1,000	..
6		Loading and unloading charge of the container plants when departmental vehicle engaged	..	..	10,000	..
7		Planting and refilling the container plants of 30 cm. cube pits planted area.	..	..	1,000	..
8		For replacement of casualities for re-opening failed pits for all types of soil excluding transports	..	..	1,000	..
9		Weeding and soil workng 1m dia and 15 cm. depth around each plant.	..	..	1,000	
10		Cost of two name boards 1.20 m. X0.90 m. inzin sheets 24 guage including double coat painting writing letters— 1.20 X 0.90—1.08 M. 0.90X0.60—0.54 M. 1.62 M.			M2	
11		Fencing the area to protect the plantation from cattle with proposals thorns to a height of 1.2 M. in crow bar holes with kniting	..	..	RM.	
12		Planting granite stones of 750 Cm. X 15 cm. X 15cm. at an intervalt of 3 chains in between the tation	..	..	Each	..
13		Contingencies for unforeseen expenditure such as purchase of insecticides, etc.			L.S.	
		Tota ..				

APPENDIX No. XVIII—H

MODEL ESTIMATE FOR RAISING INTE SIVE THREE PLANTING NURSERY OF EUCALYPTUS HYPRID CONTAINERS SEEDLING FOR PUBLIC SUPPLY.

(1)	(2)	(3)	(4)	(5)	(6)	(7)
		1 Clearing the nursery sites ..	..	..	..	L.S.
		2 Site rent for 6 months ..	..	..	..	Per month.
		Supply for Mater private wells..	..	..	..	Per 1000 bags per month
		3 Forming mother beds 50 Nos 100 plants per bed..		..	..	per bed.
		4 Waterining mother beds twice day for 30 days ..		..	..	Per bed per day.
		5 Waterting once daily for 60 days ..	—	..	..	Per bed. Per day.
		6 Colleecti on of good earth ..	..	..	..	Per C.L.
		7 Cost of manre including transport ..	—	..	..	C.L. (or) 0.5 m 3
		8 Mixing good earth and manure etc., and filling in Polythene bags xiranging them in beds and pricking seedlings in the bags 1 seed-aring per bag. ..	..	..	..	Per 1000
		9 Watering the containers twice daily for thirty days (13 x 25 size)				Per 1000
		10 Watering the containers once daily till selling out				
		11 Erecting Pandals for providing shade to the transplanted containr seedlings. ..	..	..	..	Per 100
		12 Fencing around the nursery ..	..	..	..	Per bed.
		13 Purchase of Mud pots ..	..	..	..	Per R.M.
		14 Contingencies for pesticide (etc) ..	..	..	..	L.S.
		Total				

APPENDIX No. XV III-I

MODEL ESTIMATE FOR RAISING ALBAIZZIA MODUCCANA (SOFT WOOD NURSERY IN THANJAVUR DIVISION.

Size of Bag 13 x 25 cm. **Duration of nursery : 12 months.**

Item number.	*Quality.*	*Description of work.*	*F. S. R. item number.*	*Rate per.*	*Amount.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	..	Clearing and levelling nursery site	..	..	L.S.	..
2	..	Forming mother beds by mixing manure breaking clods and levelling them - in No.	..	..	Per bed.	..
3	..	Watering twice a daily with resecans for first thirty days ..	..	..	Per day per days.	..
4	..	Watering once daily with resescns for 60 days	..	..		..
5	..	a. Collection of good earth — 4 cl. 1000 days ..	..	..	4 cl.	..
6	..	b. Cost of manure including transport	..	..	Per cl.	
7	..	Watering twice daily for the container with rose can for 30 days ..			Per 1000 per day.	..
8	..	Watering once daily for the containers with rosecan for the subsequent 60 days.	..	..	Per 1000	..
9	..	Watering once in alternate days till planting out for 150 days in 9 months (one year old seedlings to be planted.	..	..	Per 1000 per day.	..
10	..	Pay of nursery watcher for protection for 12 months	..		Per month	..
11	..	Fencing around the nursery to protect the nursery from damage by cattles.	..	..	R. M.	..
12	..	Land rent and charges for the supply of water from the private well to the nursery.	..		Per month	..
13	..	Purchase of pots, rosecane etc.	..		L.S.	..
14	..	Contuingencies for unforeseen expenses such as purchase of insecticides repair to rosecans and pots etc.	..	..	L.S.	..

APP ENDiX No. XVIII— J

MODEL NURSERY ESTIMATES FOR RAISING MISCELLANEOUS SPECIES LIKE VELVELAN, PARAMBAI, VAGAI NEEM AACHAN, ETC., FOR PLANTATIONS IN THANJAVUR DIVISION.

Size of Bag 13 x 25, 200 *Gauge.* *Duration of Nursery* : 8 *months.*

Item number.	*Quantity.*	*Description of work.*	*F.S.R. item number.*	*Rate per.*	*Amount.*	*Remarks*
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	..	Cost of polythene bags (rate will be furnished by the District Forest Officer).	..		1000 bags.	..
2	..	Cost of seeds	..	..		..
3	..	Clearing the nursery site, cutting uprooting and removing growth, etc.	..	..	10 x 1 m bed	..
4	..	Formation of germination beds by breaking clods mixing with farmyard manure and earth, forming nursery and earth, forming beds of size 10 x 11 x 30 m. with side support, sowing seeds, watering for the day and covering with straw (excluding the cost of manure).	..	..	Per bed	..
5	..	Cost of farm yard manure including the cost of transport to the nursery site.	..	..	Per C.L.	..
6	..	Watering the mother beds rose cans once daily	..	..	Per C.L.	..
7	..	Watering the mother beds rosecane once daily	..	..	Per C.L.	..
8	..	Collection of fertile earth and farmyard manure and mixing them in the ratio 3 : 1 filling them in polythene bags arranging the bags in the beds pricking the seedlings, including the cost of manure (13 x 25 cm. bags).	..	..	Per 1000 b	..
9	..	Watering the container plants with rose cans twice daily for 30 days including weeding.	..	..	Per 1000 b per day.	..
10	..	Watering the container plants onee daily, with rose cans for the next 60 days (including weeding.)	..	..	1000 bags.	
11	..	Watering the container plants thereafter. once in alternate days wite rose cans till planting (including weeding)..	..	..	1000 bags per day.	
12	..	Shifting the container seedling weeding grading and rearranging in the beds (5 shifts)	..	..	Per 1000 bags per shift.	
13	..	Rent for the private lane for keeping the nursery 8 months. ..	..	..	Per ha per month	
14	..	Charges for the supply of water from private wells wherever necessary, ...	..	..	Per 1000 bags per month.	
15	..	Erection of cattle droof fence to a height of 1.2 m and fixing the thorns in crow bar boles with knitting including the cost and collection of thorns and transporting to a maximum lead of 250 m	..	..	Per K M	
16	..	Engaging a nursery watcher	..	..	Per 100000 seedlink per month.	
17	..	Construction of a temporary mazdoor shed of size 3 x 3 x $2\frac{1}{2}$ metre.			one per nursery	
18	..	Contingencies for unforseen expenses such as diging water storage pits, purchase for opes, pesticides, etc.	..	..	L.S.	

APPENDIX No. XVIII—K.

MODEL ESTIMATE FOR RAISING RIVER BANKS AND CANAL BANK BAMBOO PLANTATION IN THANJAVUR. DIVISION

Serial number.	*Quantity.*	*Description of work.*	*F.S.R. item number.*	*Rate per.*	*Amount.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	..	Clearing the planting line to a width of 1.5 m. by cutting thorny bush and other growths.	..	..	..	..
2	..	Aligning and staking 6 x 6 espacement	..	..	Per 1000 spot	..
3	..	Digging pits. 60 x 60 cm. x 45 cm. cube Q.F.S.R. Tiruchi District	..	..	Per 1000 pist.	..
4	..	Transporting Bamboo rhizones from the nursery site to lorry site to the road site of the plantations as per quotations.	..	..	Per 1000	..
5	..	Transporting the Bamboo rhizomes from the lorry site to the road site of the plantations as per quotations.	..	..	Per 1000	..
6	..	Cost of Bamboo rhizomes (as pet quotation) from private nursery).	..	..	Per 1000	..
7	..	Unloading Bamboo rhizomes from the vehicle and transporting from the unloading site to refilling the pits and watering puddling and planting.	..	..	Per 1000	..
8	..	Male mazdoor for watering and doing other cultural operations from the date of planting, i. e. 15th July 31st March one male mazdoor per 6 hours.	..	..	Per month	..
9	..	Female mazdoor to assist plot mazdoor from 1—8—1982 to 21—9—1982 and 1—1—1983 to 31—2—1983, 1 F.M. per 6 Ws. 142 days.	..	..	Per day.	..
10	..	Fencing for covering the Bamboo plants with the adjan leaves (two leaves for plant).	..	..	1000 plants	..
11	..	Digging wells 2 wells for ha. 1.5 m. radius 2 m depth	..	..	Per well	..
12	..	Fencing around the plants with brush wood thorns	..	..	Per R.M.	..
13	..	Contingencies for unforseen expenses such as purchase of pots, repairs to pots, etc.	..	..	L.S.	..

SPECIFICATION

Item 5.—Transport through lorry will be done only obtaining the quotation and the actuals higher charges will be incurred.

Item 6.—The local price will be only incurred.

Item No. II.—Digging wells for watering will be done and during February and March 1983 until the water is stopped in river.

APPENDIX No. XVIII—L.

MODEL ESTIMATE FOR RAISING ROAD AVENUE PLANTATION IN THANJAVUR DIVISION.

(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	..	Aligning and marking or stiking for digging bits	..	..	..	1000 Nos.
2	..	Digging pits of size 60 cm. x 60 cube	..	..	..	1000 Nos.
3	..	Cost of manure (One cart-load per 20 plants)	..	..	..	.C.L.
4	..	Mixing manure filling the pits to 3/4 planting including watering on the day of planting.	..	..	..	100 Nos.
5	..	Transporting the container plants from nursery to the planting set upto a lead of 5 kms. including loading and unloading.	..	..	..	100 Nos.
6	..	Forming Euphoria line fence (Bamboo thorn fence) or brush wood thorn fence.	..	..	..	Each.
7	..	One gang mazdoor of age 25-40 for protection of 1000 plants for 9 months.	..	..	..	Per month
8	..	Repairing the fence two times in each year	..	..	..	Each fence two times

9	....	Replacement of casualities at 10 per cent including transport	..	..	..	100 Nos.
10	....	Watering the plants in RAP wherever necessary (in during summer season for 90 days) at 10 litres per plant ..	..	..	100 plants. / 90 days	..
11	....	Buying mud pots (10 lit.) including cost of conveyance and digging earth, etc, for filling earth, etc. for filling water and making seepage arrangements after planting out along roads.	..	..	Each.	..
12	....	Contingencies for unforseen item of expenditure	..	..	L.S	..

APPENDIX NO. XVIII—M.

MODEL ESTIMATE FOR RAISING RAILWAY LINE PLANTATION.

Single Row : Espacement : 10 m × 10 m.

Number of seedlings per K.M.for two sides—100 (One side 200+10—Casualities).

Item No..	*Quantity.*	*Description of work.*	*FSR Item No.*	*Rate.*	*For.*	*Amount.*
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	....	Clearing growth wherever necessary L.B. Quantity 100m 11000m		..	..	..
2	....	Alligning and marking 10 m espacement	..	..	..	Per 1000
3	....	Digging 60 cm. cube pits	..	..	..	Per 1000 pits.
4	....	Transport of potted seedlings in departmental vehicles including loading and unloading and distribution at planting site (200 +20).	..	..	Per 1000 plants'	..
5	....	Planing potted plants of all sizes in 60 cm. cube pits in main row after filling the pits with 1/3 of farm yards manure tanksilt and top soil including the cost of manure.	..	..	Do.	..
6	....	For making propose tree guards to and inner dia of 1.2 met height thickly over and making into a cup shape binding with binding wire or the outer side and fizing	..	..	Do.	..
7	....	Replacement of casualities	..	..	Do.	..
8	....	Weeding and soil working 1 mt. dia and 15 cm, depth around each plant including application of chemical fertiliser. ..	..	..	Do.	..
9	....	Cost of Fertiliser NP 100 grams twice per plant during September October and November December	..	--	Per bag of 50 Kg.	..
10	....	Construction of mazdo or shed 1 shed for 5 km 750 (1 shed 150) 5 shed.	..	--	Each	..
11	....	Cost of Zinkboard in 250 guage and writting intanted size letters for plantation and a venues after double coat penting and framing with good quality country wood. (For 25 km 3 boards 2×1m 6H2 × 125—750)	..	--	Each.	
12	....	Pay of plot watcher for protection 11 watcher for 5 km. Rs. 175 5 km. x 9 months	..	..	Per month.	..
13	....	Contingencies and unforseen expenditure	..	..	L.S. D	..

APPENDIX No. XVIII– N.

MODEL ESTIMATA FOR RAISING FRUIT BEARING AND OTHER HORTICULTURAL SEEDLINGS FOR TUBLIC SUPPLY.

By Direct sowing of seeds in mud pots (Nelli, Jack, Cauva Tamarind) etc., 1982– 83 Thanjavur district.

Size mud pots : 10 cm. Top cm. bottom and 20 cm. height (Duration in nursery 6 months).

Item No.	Quantity.	Description of work.	F.S.R. item No.	Rate.	Per.	Amount.
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	....	Ccst of mud pots of size 19 cm. top 5 cm. bottom 20 cm. height ..	..	..	Per 1000	..
2	....	Cost of seeds	L.S.	..	..	..
3	....	Clearing the nursery cutting, uprooting and removing growth, etc.	..	..	10 x 1 m bed	..
4	....	Collection of fertile earth and forms yard manure and mixing yard manure them in the ratio 3:1 filling them in pots of size 10 cm. top, 6 cm. bottom and 20 cm. height and arranging in the site including cost of manure	..	..	1000 pots.	..
5	....	Watering the pottled plants 30 days twice daily— 30 days ..	..	..	Per 1000 per day.	..
6	....	Alternate days—30 days	..	..	Do.	..
	....	Once in three days—30 days	..	..	Do.	..
8	....	Site rent for keeping nursery for 6 months ..	..	..	..	..
9	....	Charges for supply as water from private wells wherever necessary 90 days.	..	..	..	..
10	....	Extracting cattle proof fence to a higtht of 1.2 mt. and fixing in crow bar holes including the cost of collection of thorns transporting to a maximum lead of 250 Mts.	..	..	Per R.M.	..
11	....	Engaging nursery mazdoor	..	..	Per month	..
12	....	Construction of mazdoor shed of size of 3 m x 3 m 2½ m. ..	..	..	Each.	..
13	....	Contingencies such as digging water storage pits, purchase of ..	..	..	..	..

APPENDIX XIX-A

Timber Plantation Working Circle.

(a) Control of regeneration operations :

Range :

Prescribed				Done							Control	
Year.	Locality	Area in hectares.	Salient features of Technique (item wise).	Year.	Locality.	Area in hectares.	mplementation technique.	Cost per hectare.	Total cost incurred.	Deviaiton.	Authority and reason.	Remarks.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)

(b) Control of cultural operations (Thinning etc.):

Range :

Operations prescribed.				Operations carried out.					Yield obtained.		Revenue realised		Control.		
Year	Locality	Nature of operation.	Area in hectare.	Year.	Locality	Nature of operation.	Area in hectare.	Cost of operations.	Timber in cunner poles in number	Fire wood in tonnes.	Total	Rate per hectare.	Deviation if any.	Authority and reason	Remarks.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)

APPENDIX XIX-B

Fuel Working Circle.

(a) Control of Fellings.

Range :

	Prescribed.			Done.				
Year.	*Series.*	*Coupe number.*	*Area in hectares.*	*Coupe number.*	*Area in hectares.*	*Revenue realised.*	*Yield.*	*Remarks.*
	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)

(b) Control Journal.

1. Deviations .. .. Reference to major deviations with reasons.
2. Market .. .. Cost of exploitation and market conditions prevailing prices and name of the consuming centres.
3. Exploitation.. .. .. Notes on observance of felling rules and agreement condition by contractors.
5. Coppice regeneration .. .. .. Observation of equality and extend of coppice regeneration in worked coupes.
6. Rotation .. .. Suitability of Rotation prescribed.

Measures for improvement .. .. Degree in which closure to grazing was enforced. Protection against illicit felling; suggestions for improvements in communications.

(c) Control forms for the fuel working control of plantation work.

Range :

	Prescribed.		Done.			
Year.	*Locality.*	*Area in hectares.*	*Locality.*	*Area in hectares.*	*Cost.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)	(6)	(7)

(d) *Control Journal.*

1. Nursery .. .. .. Comment on quantity of seeds per standard bed with refrence to the germination. Suggestion for improving nursery techniques.
2. Planting .. .. .. Time, monsoon, method of planting and replacement of casualities.
3. Growth .. .. .. Notes on density development of stand, height and girth increment stocking martality etc.,
4. Exploitation .. .. .. Notes on market and demands comments on yield per hectare.

APPENDIX XIX-C.

CO-ORDINATION WORKING CIRCLE.

(*a*) Control of fillings

Prescribed.					Implementation.							Yield in ton Kg. Revenue.				Control.		
Year.	*Series.*	*Locality.*	*Coupe number.*	*Plantation year.*		*Year.*	*Series.*	*Locality.*	*Coupe number.*	*Coupa numbar.*	*Plantation pepar.*	*Total.*	*Per hactares.*	*Total.*	*Totel.*	*Ramerks.*	*Authority and reason.*	*Deviotion of any.*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)

" Yield should be given in detail, i.e.

1. Number of poles removed.
2. Firewood (Roots and billets)
3. Pruned materials (brnches) in head-loads or cart-loads.
4. Fuel or firewood obtained by pruning the side branches (sullys) in tonnes, Revenue obtained by pruning and revenue. obtained by clear felling the coupe should be given separately.

(*b*) *Control of regeneration operations* :

Name of the Range

Prescribed.					Work done.							Control.		
Year.	*Series.*	*Locality.*	*Area in hectare s.*	*Salient features of technique (item wise)*	*Year.*	*Series.*	*Locality.*	*Area in hectares.*	*Implementation of technique.*	*Total cast.*	*Cost per hectare.*	*Deviation, if any.*	*Reason and authority.*	*Remerks.*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)

(c) Control of cultural operation in Casuerine.

(i.e. Prening etc).

Nama of Rauge :

	Prescribed				Work down							Control.		
Year.	*Name of the Block or locality.*	*Coupe number.*	*Area in hactares.*	*Brief details of work.*	*Year.*	*Name of the the Block.*	*Coupe number.*	*Arae in hectares.*	*De tails of work.*	*Cost of operation.*	*Yield obtained.*	*Deviation if any.*	*Reasons and authority.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)

(d) Record of works in Casuerina working circle.

A. Name of the Range :

B. Name of the series :

C. Name of the block or locality, coupe number and plot numer, etc.

Year.	*Notery and kind of work prescribed.*	*Para of working plan*	*Area in hectares.*	*Method of Execution*	*Number of man hours of machine hours utilised.*	*Date of commence-ment.*	*Date of completion.*	*Total cost.*	*Cost per hectares.*	*Deviation if any.*	*Reasons and authority.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)

APPENDIX NO. XIX-D.

(e) Control of Felling Bamboos.

Serial number.	*Name of the plantation.*	*Year of forming.*	*Area in hectares.*	*Total number. culms present.*	*Number of clams market.*	*Number of culms ramoved.*	*Balancae number of culms reteinad.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)

BAMBOO.

(b) Control Journal.

1. **Deviation** ... . Reference to deviations with reasons.

2. **Market** ... ... Prevailing prices and the consumer centres, cost of exploitation and Market conditions.

3. **Felling Rules** ... ... Comments on breach of felling rules and penalty levied.

4. **Flowering** ... ... Incidence of sporadic flowering, spread of gregarious flowering extent of natural regeneration suggestions for rehabilitation of flowering areas.

5. **Paper Mill Supply** ... ... Observations on mode of supply and relative efficiency of methods.

APPENDIX No. XIX-E.

(a) *Minor Forest Produce working circles.*

Control Book.

Prescription of the Working Plan.						*Record of operations carried out.*				*Details of yield.*				*Control.*
Year.	*Name of the produce.*	*Unit of lease.*	*Period of lease.*	*Method of working.*	*Year.*	*Name of produce.*	*Unit of lease.*	*Period of lease.*	*Method of working.*	*Yield obtained.*	*Gross revenue realised.*	*Expenditure incurred.*	*Deviation's if any, with authority.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)

MINOR FOREST PRODUCE WORKING CIRCLES.

(c) *Record of revenue realised (for each unit.)*

		Revenue realised in Rs. for each year of the plan period upto 1990–91.					
Serial number (1)	*Neme of the lease unit.* (2)	1981–82.	1982–83. (4)	1983–84. (5)	1984–85. (6)	1985–86. (7)	*Remarks* (8

(d) *Control of Regeneration Operations.*

Prescribed.					*Done.*					*Control.*
Year.	*Locality.*	*Area in hectares.*	*Salinet features of Techniques Itemwise.*	*Year of Operation.*	*Locality.*	*Area Re-generated in Hectares.*	*Implementation Technique.*	*Duration, if any.*	*Reason and Authority.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)

APPENDIX No. XIX (E).

MINOR FOREST PRODUCE WORKING CIRCLE.

(e) Plantation Journal.

List of headings :—

1. Introduction.
2. Situation.
3. Nursery.
4. Planting operations.
5. Miscellaneous.

TABULAR STATEMENT.

Name of plantation (Locality, Block etc.)

[illegible]	Name of the locality or Block of R.F. or R.L.	Year of formation.	Species planted.	Area planted.	Technique adopted item Wise.	Result of enumeration.	Expenditure.	Revenue.	Intermidiate yield.	Final yield.	Remarks.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)

APPENDIX XIX (F).

MISCELLANEOUS REGULATIONS.

(a) Control book for grazing :

Pescription of working Plan.				Operation carried out.				Control.				
Year.	Total area in hectare.	Area open to grazing in hec e.	Name and area of localities closed to grazing in hectares.	Year.	Total area in hectares.	Area opened to grazing in hectares.	Name and area of localities closed to grazing in hectares.	Number and description of cattle grazed.	Grazing revenue realised.	Grazing in cidence per Cow.	Deviation if any with authority.	Remarus.**
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)

**If there is penning, name of the pen, details of pennning such as members of cattle licensed to pen, etc., should be given.

NOTE.—Areas eolosed to grazing—All Casuarina and cashew plantations are closed to grazing for a period of [v five years including the year of formation whereas Mangreve working circle and coconut plantations at Manalekudi are closed to grazing permamently.

APPENDIX No. XIX. (G)

Register of Deviations (Common to all Working circles).

Year	*Working circle*	*Serial number of deviation.*	*Control form number and page.*	*Paragraph.*	*Prescription.*	*Nature of deviation.*	*Reasons for deviations.*	*Authority sanctioned with number and date of order.*	*Remarks on any possible action to remedy the deviation.*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)

Working Plan.

Prescriptions.					*Work done.*					*Control.*				
Year.	*Working circle.*	*Measures and brief details of work.*	*Locality.*	*Area in hectares.*	*Year.*	*Working circle.*	*Nature and brief details of work*	*Locality.*	*Area in hectares.*	*Cost of each item.*	*Total cost.*	*Deviation if any.*	*Reasons and authority.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)

A—Prescription of the working Plan.

B—Measures suggested in the working plan.

C—Measures neither prescribed nor suggested in the working plan but carried out during the year.

APPENDIX No. XIX.(H)

FINANCIAL STATEMENT.

Revenue.					*Expenditure.*			
Working circle.	*Working Plan forecast.*	*Actuals.*	*Difference between Forecast and actual.*	*Remarks.*	*Working Plan forecast.*	*Actuals.*	*Difference between Forecast and actuals.*	*Remarks.*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)

Control of prescriptions :—

Printed forms one for each working circle will be listed out in brief. The important prescriptions to be carried out during every year will be supplied to the District Forest Officer. This is essential to ensure that no important prescription is lost sight of and therefore it shall be the peronal responsibility and duty of the District Forest Officer to to write up forms during every itself with implementation details. The prompt writing of these forms will greatly facilitate the exercising the other control forms and records prescribed besides exercisie ective control over the implementation of the plan. As these forms would give aclear prespective of work to be done during each year their usefulness at the time of plan of operations discussion needs no special phasis. Ten sets of these printed forms will be supplied one for each year of the plun containing ten forms.

59-10—47A

APPENDIX No. XX.

LIST OF MAPS PREPARED FOR THANJAVUR DIVISION (PLAN PERIOD 1983-84 TO 1992-93).

Serial number. (1)	*Details of Map.* (2)	*Range.* (3)	*Scale.* (4)	*No. of maps.* (5)	*No. of copies.* (6)
1	Detailed *cum* Range Management maps	Thanjavur Range (Part)	1 cm=0.64 Km.	2 Nos sheet ½ and 2/2).	6 copies in each (i.e. total 12 copies)
2	Do.	Pattukottai Range ..	Do.	One No. only	6 copies.
3	Do.	Sirkali Range and Kumbakonam Range (Part).	Do.	One No. only	7 copies.
4	Do.	Kumbakonam Range ..	Do.	2 Nos. sheet ½ and 2/2)	6 copies in each i.e. total 12 copies.
5	Do.	Mannargudi Thanjavur (part) and Kumbakonam (Part).	Do.	3 Nos. sheet 1/3, 2/3 and 3/3.	8 copies in each i.e. total 24 copies.
6	Detailed map Avanam R.F. Bamboo W.C.)	Pattukottai Range (Part)	1 cm=40 metres	One only	6 copies.
7	*Detailed map.*				
	1. Sediakudi R.F.	Sirkali Range (Part) ..	1 cm=0.1584 Km.		
	2. Kediampalayam R.F.		and		
	3. Mudaliamadu R.F. (Casuarina W.C. Part).		1 cm=0.0792 Km.	One sheet	6 copies.
8	*Detailed Map.—*				
	Casuarina W.C. (Part) and Mis Regulations)—				
	1. Maharajpuram R.F. ..	Kumbakonam Range ..	1 cm=0.1584 Km.	One sheet	6 copies in each
	2. Vadugagudi R.F.	Thanjavur Range ..	and 1 cm=0.0792 km.	in each.	
	3. Alakudi R.F.	Sirkali	..	..	..
	4. Gopalasamudram R.F. ..	Do.	..	..	..
	5. Pudupattinam R.F. ..	Do.	..	..	..
7	Key map of Thanjavur Division ..	Thanjavur Division ..	1 cm=2.534 Km.	One sheet	Four copies (with tracing negative duly indexed).
8	Map showing the distribution of Forest types.	Do.	Do.	One sheet	Five copies (coloured).

APPENDIX No. XXI.

MANAGEMENT PLAN FOR THE ENTIRE POINT CALIMERE WILDLIFE SANCTUARY 1982-83 1982-83 TO 1984-85 (3 YEARS ONLY).

This management plan covers the entire point Calimere Wildlife Sanctuary situated in Thiruthuraipoondi Taluk and Pattukottai Taluks of Thanjavur district on the east coast of Tamil Nadu between 10° 15' and 10° 35' north latitude and 79 ; 20' and 79° 53' east longtitude. The forests were partly under the control of Ranger, Vedaranyam (Kodiakadu Reserved Forest,, Kodiakadu Extension Reserved Forest) and Ranger, Pattukottai (Muthupeta Thuraikadu, Vadakadu, etc.).

This is the first Management Plan ever written, while preparing the plan guidelines issued by the Government of India in their letter No. 13-4/80-FRI/WL Ministry of Agriculture), dated 28th April 1980 and the advisory report by Thiru Saroj Raj Choudhury, I.F.S., Field Director, Simplipal Tiger Reserve, Orissa were kept in mind, proposals for capital nature of works has been made for 3 financial years viz., 1982-83, 1983-84 and 1984-85. Also several proposals have been made to improve the facilities to the tourists.

I am grateful to Thiru A. M. Mohmood Hussain, I.F.S., Additional Chief Conservator of Forests (Wild Life), Coimbatore for the encouragement and guidence given in preparing the plan.

V. GANESAN,
Wild Life Warden, Thanjavur

31st March 1982.

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CHAPTER I.

Introduction and background information.

(a) *Name, situation and status* :

Point Calimere sanctuary is situated about 120 Kilometres from Thanjavur and 12 Kilometres from Vedaranyam bounded by Salt pans on west and north, Bay of Bengal on the east, Palk strait on the south.

Management of the Coastal ecosystem has attained much significance presently due to the drilling and testing operations for oil exploration which are currently in progress off the Point Calimere coast.

The present sanctuary consists the whole of Kodikadi Reserved Forest, Kodikadu Extension Reserved Forest Bits I, II and III and Talanayar Reserved Forest. Finally notified long back in the year 1892, 1938 end 1931 respectively and the same was declared as the Point Calimere Wildlife sanctuary to a total extent of 1,723.31 hectares in G.O. Ms. No. 1821, Agriculture, dated 13th June 1967.

Now in order to expand the Sanctuary areas Kodikadu extension Forest Blocks IV and V taken ever from the Panchayat on 28th November 1981, Alaivai Porombo ke situated in Kodikadu Reserved Forest 327.19 hectares acquired from Vedaranyaeswarar temple on compensation, the great Vedaranyam Swamp lands excluding the portion effectively occupied by Messrs. Wimco and Mettur Chemicals, Muthupet, Thuraikadu, Vadakadu, Maravakadu and Tamarakottai Nature Reserves have been added, and necessary proposals under section 18 of the Indian Wildlife Act 1972 are submitted to the Chief Conservator of Forests, for declaring the entire area as Wildlife sanctuary.

(b) *Past history and Past management* :

The present PointCalimere Sanctuary was regular reserved forest and was declared as Reserved Forest long back in the year 1892. The extensions were notified in the year 1938 and the protection was looked after by the staff for Mannargudi Range. Subsequently there was a Ranger posted to Vedaranyam only for the protection of Wildlife, The area was declared as Point Calimere Wildlife sanctuary in the year 1967 (G.O. Ms. No. 1821, Agriculture Department, dated 13th June 1967).

(c) *Distribution and area and boundary details* :

The total extent of the area is 25,435.31 hectares extends from Thalanayar Reserved Forest to Thamarakottai Reserved Forest near Adirampattinam. It includes Natural Reserves also i.e., Muthupet, Thuraikadu, Vedakadu, Maravakadu and Thamarakottai.

The details of areas are furnished below :

		Hectare.	
1	Kodikadu R.F.	1,475.10	
2	Kodikadu Extension R.P. I	23,646	
3	Kodikadu Extension R.P. II	16.10	
4	Kodikadu extension S.F. III	7.0	Already declared as sancturary in 1967 addition proposed to the sanctuary.
5	Kodikadu Extension R.F. IV (65A-1B)	10.16	
6	Kodikadu Extension R.F. V65	183.93	
7	Talanaiyar R.F.	1,236.29	
8	Muthupet R.F.	6,803.01	
9	Thuraikadu R.F.	2,636.54	
10	Vadakadu R.F.	320.28	
11	Maravakadu R.F.	1,356.00	
12	Tamarakottai R.F.	529.66	
13	Vedaranyeswarar Devasthanam Lands	327.19	
14	Mud plat	10,154.41	
15	Alaivari porambokes 53-1A	149.01	
	Total	25,435.31	

Boundary Description

North.—The boundary starts from the North-west corner of Thamarakottai R.F. and runs eastwards along the northern border of Thamarakottai R. F. till it reaches the common boundary between Thamarakottai and Maravakadu Reserved Forests thence the boundary runs eastwards and northwards along the western limits of Maravakadu R.F. and reaches the north-west corner of the said R.F. Then the boundary runs eastwards along the northern limits of Maravakadu, Vadavakadu and Thuraikadu Reserved Forests till it crosses Pamaniar river. Thence the boundary extends northwards along the common village boundary extends northwards along the common village boundary between Thuraikadu and Muthupet villages till it reaches the south-west corner of 135. Jambavanodai village in the trijunction of Jambavanodai, Muthupet and Thuraikadu villages. Thence the boundary runs along the northern limits of the Great Vedaranyam Swamp which is also the Southern limits of Jambavanodai, Thillaivilagam, Idumbavanam, Voimedu, Tennadar, Panchanathaikulam Nedusethi, Aykkaranbulam, Pannal, Kodinavayal, Adanur Vedaranyam and Agasthiampalli villages till it reaches Main Highways road between Kodikadu and Vedaranyam. Thence the boundary runs northwards along the highway road up to the northern border of Adappar river. Thence the line runs westwards, northwards and eastwards along the northern bank of Adappar, South-western and northern limits of Talanayar R.F. till it meets the north-east corner of the said R.F. in the western bank of Vedaranyam channel.

East.—Thence the boundary runs southwards along the western bank of Vedaranyam canal and eastern border of Talanayar R.F. till it reaches a point in northern bank of Adappar river. Then it runs westwards along the northern bank of Adappar river till it crosses a point in Vedaranyam Nagapattinam Highway road. Thence the boundary runs southwards along the said Highway road till it touches a point in the northern limits of Kodikadu R.F. Thence the boundary runs wastwards along the northern bank of Kodikadu R.F. upto Bay of Bengal. Thence the boundary run southwards along the seashore till it meets the north-east corner of Vedaranyeswarar Devasthanam land which is the extreme southern end of Bay of Bengal.

South.—Thence the boundary runs westwards along the northern limits of Palk strait till it reaches the south-west corner of Thamarakottai Reserved Forest.

West.—Thence the boundary runs northwards along the western limits of Thamarakotta[1] R.F. and reaches the starting point on the northwest- corner of same R.F.

(*d*) *Notifications sanctury*:—

In view to preserve the ecological, faunal, floral, coral and Zoological importance of Point Calimere, Government of Tamil Nadu notified as extent of 1,723.31 hectares as Point Calimere Wildlife Sanctuary in G.O. Ms. No. 1821, Agriculture, dated 13th June 1967.

(*e*) *Topography* :—

The terrain is almost plain elightly slopy towards south-east. There are small lagoons and natural creeks with pits and puddles. Composed of mostly of sandy loamy soil the area is isolated from the main land by swamp, back-waters and inlets.

(f) *Major components of Flora and fauna*:—

Flora :—*Kodikadu Reserved Forest*:—Tropical dry everygreen forest, peculiar type that is confined to northern Ceylon and to the Coastal region of Coromondal. Actually the vegetation consists of thorny evergreen thickets consisting of Manikara hexandera, Barringatonia acutangula Ficus retusa Eugenia jambolans, strychnos nuxyomica. Sapindus, emarginatus, Ambizzia amara, Tamarindus indica, Inga dulce.etc.

Shrubs : Dodoneala Viscosa
Cassia auriculata
Pavetta indica
Canthium parvifloram
Ixora arborea
Maba buxifolia

Herbs : Solanum triiobatum
Pavonia zeylanica

Grass :—Aristida spp.

Cyperus spp

Cynodun dactylon

Climbers :—

Acacia instia

Pterolobium indicum

Assargus racemosus.

Mangrove Forests of Muthupet, Talanayar etc.—This type found all along the fringes of lagoons and islands of Muthupet Chatram, Thalanayar, Thararankottai etc., This is typicallty a closed evergreen forest of moderate height composed of trees specially adopted to survive on tidal mud which is permanently wet with salt water.

Floristics of this type are:—

Avicennia officinalis.

Excoecaria agallocha.

Avicennia alba.

FAUNA :—

Black buck or Indian antelope (Antilope Cervicapra) is the Chief attraction of the Point Calimere sancturay. Its striking colour and beautiful sprialled horns give it an elegance hardly equalled by any antelope. There is a large concentration of this animal in Kudiyakadu. Black buck usually prefers open sandy stretches and large herds are often seen at the very edge of the sea. Only during the hot part of the day they move to the cover of the jungle.

Spotted deer (*Chital*).

This is one of the most graceful of the deer species.

Wild bear : It is commonly found in Kodiyakadu Jackal.

Fruit bat.

Bonnet macque.

Common mongoose.

Avifauna:—

The swamps of Point Calimere are of great interest to Orinithologists since it abouds a considerable variety of interesting avifauna.

Flamingoos visit this swamp in thousands during winter months and the vast congregation of these large birds with white and pink plumes offer an spectacular display. Large numbers of migratory birds can also be observed in the back waters of Muthupet and Thalanayar during winter months.

BIRDS :—

White checked bulbul.

Pond heron

Brahminy kite

White breasted king fisher

Common myna.

Common babler.

Jungle babler.

Red Vented bul bul.

Spotted dove.

Grey horn hill.

Wood shrike.

White wag tail.

Migratory birds :—

Plamingo
Black headed gull.
Brown headed gull.
Darter.
India Reef heron.
Pin tail.
Grey pelican.
Large sand plover.
Grey plover.
Common sand piper.
Little stint.
Caspien tern.
Common teal etc.

(*g*) *Present forms of land use including Forestry* :—

No forestry activity (Commercial) is carried out in the Sanctuary. Even collection of Pala Fruits (Manikara hexandra) and other Minor Forest Produce is not undertaken previously. Pala fruits were collected and handed over to Horticulture Department, that has been stopped now with a view to prove food materials for the Wildlife.

(*h*) *Status of Wildlife* :—

The two major species of Wildlife, viz, Black buck and spotted deer which occur in the Sanctuary in open range are well protected from peaching or other disturbances. In the western side of the sanctuary long trences were dug upto the sea shore to prevent illegal entry of vehicles.

The jackel, which is a natural predator of the deer is found in small numbers and they prey on the new borns. The population of both black buck and spotted deer is found to be on the increase.

As per Census conducted by Forest Department personnel and Avifauna Project Staff (B. N. H.S.,) on 31st March 1981 the total number of Black buck is 1546. During 1977, 1978, 1979 and 1980 the number of black buck was 659, 688, 983 and 1108 respectively. The figures show that there is a regular gradual but steady increase in their populations during the last four years.

CHAPTER—II.

Objective of Management.

The objectives are:—(1) To preserve and improve the habitat so as to afford optimum facilities and a suitable environment for the breed and development of the Wildlife at the Point Calimere Sanctuary.

(2) To improve and create a better acquatic system in the Great Vedaranyam Swamp to facilitate the water birds small and large who get their acquatic resources diffentially from wading in moist muddy out-crops to picking from upto 0.5M deep waterm and some even like the elicans fishing in deeper waters. Migratory water fews also make use of these acquatic habitats.

(3) Scientific management of Wildlife on modern lines by introducing modern techniques and thereby incidentally improving tourism.

CHAPTER—III.

Plan of Action—Implementation of Objectives.

Period of Plan :—

The plan period will extent from 1982—83 to 1986—

1. *Habitat improvement* :—

The existing vegetation will be preserved from unauthorised felling and denu action. In all the gaps in the sanctuary planting of tree sapplings of Fodder value and fruit valve will be taken up. All long the roads from Agasthiyampillai to Kodiakadu village shade trees and trees of aesthetic value will be planted for the benefit of the tourists and visitors. There are prosopis juliflora invading the gaps of Nandupallam and Foralam areas. Necessary measures will be taken be eradicate Prosopis and thereby facilitate a better condition for water bird.

2. *Developmend of fodder* :—

During the months of April to August of each year the scrub vegetations of the Sanctuary becomes absolutely dry leaving no herbs or grasses for the deer and black buck to feed on. It is proposed to raise fodder trees 5 hectares every year at five different are as within the Sanctuary. The programme of fodder development will be carried over for 5 years (i.e. 1982 to 1986) Su-babul, Nanikara, hexandra, Pithaculobium dules, Azadirachta indica, Tamarindus indica Zizhphus jujube, Acacia leucophloea, Hardwickia binata, Acacia nilotica, Ficus, species etc., will be planted up in the sanctuary in aphased manner during the plan period and protected from the animals by tree—guards. After their maturity selected lopping will be done from these trees for feeding the animals.

3. *Water facilities—Water holes, etc.*—

In order to provide drinking water to Wildlife living in this Sanctuary area the following tanks are being developed every year by widening and deepening.—

1. Theerthankulam.
2. Pudukulam.
3. Light house tank.
4. Pudukulam.
5. Nallathannaipallam.
6. Onantheeravakulam.
7. Medimandapakulam.
8. Railway line kulam.
9. Muniappanerikulam.
10. Periappanerikulam.
11. Aruvankannikulam.
12. Chinnapalayeekulam.

In addition to these tanks, 6 numbers of water troughts during 1980—81 and 4 numbers during 1981—82 of 10m x 1.0 x 0.5 m size were constructed at the following centres of the sanctuary area and two wells of 0.3 m diamcter also sunk within the Sanctuary to provide drinking water for Wildlife during summer months.

Water trough at Aravankanni.	
Water trough at Nallathannipallam	
Water trough at Casuarina Plot II	1980—81
Water trough at Casuarina Plot I	
Water trough at Onantheerva.	
Water trough at Muniappaneri	
Water trough at Alaivari poramboke	
Water trough at Seervaryankoil	1981—82.
Water trough at Near Avuliagani	
Water trough at Near Aradipalam	

At present the good drinking water are transported by drums fitted in bullock carts and filled up into these water through once in 6 days restricting to non-rainy days. In order to minimise the expenditure on transport of water a tanker trailer is being purchased now and this expenditure will not recur again hereafter.

It is proposed to construct six small linerar ground level tanks (troughs) in different parts of the sanctuary every year for the plan period. They will be supplied with fresh drinking water. Around all the water holes, and ponds Monolick Salts will be placed.

4. *Fire, Grazing, erosion etc.*—

(*a*) *Fire*:—

There is no problem of fire. This is on account of total absence of grass in the ground floor during summer which is already kept down by the local village cattle and deer. Hence no special proposals are made for preventing fire fighting.

It is proposed to cut fire lines over a width of 5 metres at the outer boundary along the road from Agasthiampalli to Kodiyakadu and will be kept clean during summer as a measures of precaution.

(*b*) *Grazing* : –

9. In the Sanctuary the grazing permits are issued at the enhanced rate. It is very difficult to prevent village cattle from grazing inside the Sanctuary since there are no other alternate place for them. Grazing permits are issued for village cattle after verification of certificates from veterinary surgeons for Rinderpest disease. The grazing incidence is more in this sanctuary. Necessary action should be taken to restrict the issue of grazing permits. Illicit grazing is dealt with firmly.

(*c*) *Erosion* : –

Erosion is not a big problem since the sanctuary is situated on plain grounds.

5. *Santuam sanctorium* : –

There is no proposal to demarcate or maintain a Sanctum Sanitorium since the area of the sanctuary is small. The regulated entry in force, and the proposed wall and fencing should confer all the scolusion which the fauna need for unhindered development.

6. *Boundary interity*—

The present Wildlife Sanctuary is bounded by Messrs. Mettur Chemicals on west, and Salt pans on the north Bay of Bengal on the east and Palk strait on the south.

The fencing is not necessary on east and south since the sea serves as natural boundary. At present only trenches were dug to prevent the illicit entry in the sanctuary area on the northern side. It is proposed to construct a compound wall, 5 feet height on the northern border of Kodiyakadu Reserved Forest over a length of about 3,600 Metres. In the western side boundary chain link fence is proposed over a distance of about 7 kilo metres so that better protection for wildlife and can be easily seen by the visitors while going along the road.

7. *Roads and their developments*—

Roads has to be formed from Kodiyakarai rest house to light house to enable visitors to view Black Buck Wild animals and numerous birds at close quarters. At present the footpath and open areas are used as road. It is not possible to enter inside the sanctuary during rainy season. Hence a pucca road is essential.

The details of natural trials formed during 1980-81 and 1981-82 are furnished below :—

I reach of nature trial	.. ..	2.0 Kms.	Formed in 1981-82
II	Do.	1.5 Kms.	
III	Do.	1.7 Kms.	
IV	Do.	2.2 Kms.	
V	Do.	2.0 Kms.	
Forming natural trials in the sanctuary area		10.0 Kms.	Formed in 1981-82

All the natural trials already formed and proposed roads and natural trials are clearly shown in the sketch.

8. *Buildings* :—

There are two Rest Houses at Point Calimere. One is very old called as Thumbusamy Illam, constructed prior to the year 1910 which is even now structurally sound. During the current year also special repairs have been carried out to this Rest House and it is under occupation by B.N. H.S. staff.

The other one is a new Rest House called Poonarai Illam with 6 numbers of single suits and 4 numbers of double suits, constructed by Public Works Department in 1974. The condition of the Rest House is not structrually sound and the Chief Engineer (Buildings) who inspected this Rest House on 16th October 1980 remarks as follows :—

1. The deterioration in walls and falling of plastering in pillars are noticed in various places. It must be tackled in two stages before any further repairs or maintenance work is taken up.

2. The buildings must be made structurally safe by preventing the verandah beams falling down. Four Pillars to be introduced below the verandah beams and continuous beam constructed over these pillars to serve as a continuous support to the beams.

3. Grounding must be resorted to for all the damaged portions. Replastering should not be done in patches but should be taken up for the entire portions damaged.

4. Window grills shall be got exidised and fitted again. The gates and other iron materials which cannot be detached can be painted with anticorrosive paints.

Estimate may be sent up for redoing the pressed tiles on the roof wherever necessary. Proper slope shall be given as necessary.

The Public Works Department is taking action to carry out the above major repairs and the same is under correspondence in District Forest Officer's File No. 4991/81/D. This matter should be pursued and the repairs are carried out forthwith in order to avoid further deterioration of the building.

With a view of protecting Wildlife with close supervision and protection all the subordinates should be provided with quarters at Kodiakarai interelf. The old Forester's quarters at Kodia-kadu was also demolished and the quarters are available at Kodaikarai at present for the following subordinates only.

1. One combined quarters for the Forest Guard and watcher constucted during 1961-62.

2. One combined quarters for the Forest Guard and watcher constructed during 1974-75.

3. Research Scholar's quarters for occupation by the research scholars - Block I constructed during 1977-82.

4. Research Scholar's quarters—Block II constructed during 1977 to 1982.

The following building works may be taken up on a phased programme and completed as early as possible so that all the staff may be stationed at Point Calimere.

1. One number of Range Officer's quarters for the Ranger at Kodiakarai.

2. One number of Range Office building at Kodiakarai.

3. Three numbers of Foreter's quarters at Kodiakarai, Thalanayar and Muthupet.

4. Four numbers of combined quarters for Forest guard and matchers for Forest guards.

5. Two numbers of combined quarters for the Jeep, Van and Boat drivers and peon.

6. One number of Garrage including washing platform for parking the jeep, tanker trailer and van at Kodiakarai.

7. Construction of compound was around Poonarai Illam Rest House over 230 metres.

8. Construction of one Laboratory for Research.

9. Construction of two chowkies.

It is also proposed to construct 5 watch towers at different parts of the sanctuary to see the animals without any disturbances.

9. *Vehicles*:

At present one jeep is available for Forest protection and implementation of the Wildlife (Protection) Act. One Mini Bus is being purchased for the visitors to take round the sanctuary.

10. *Veterinary care*:

At present veterinary service is rendered by the Veterinary Assistant Surgeon attached to the Vedaranyam Hospital.

11. *Equipments* :

Essential items of equipments required are detailed below :—

(*a*) Camera with tele lens.

(*b*) High power binoculars.

(*c*) Survey instruments.

(*d*) Notes to catch deers for translocation.

(*e*) A permanent telescope should be installed at the rest house to see the Migratory birds.

(*f*) Purchase of 4 numbers of Walkie Talkies for use at one for office and two for two check-posts and one for the petrol party.

12. *Research*:

Black Buck and spotted deer are the major components of the Wild Life of Point Calimere Sanctuary. Of the above, black buck is an endangered species having been placed under schedule I of the Wild Life Protection Act, 1972 whereas spotted deer is the commonest of the deer found every where. Whereas spotted deer feeds on a variety of vegetation, black buck does not. This is a selective eater mainly sustaining on grass, fruits, flowers, petals, etc.

With its spectacular rise in popularity the Indian Black Buck has become a prime object for study. It is essential to have research what the animals is like and how it operates within its environment. It is hoped this will lead to greater understanding and better management benefitting the species.

Coat colour is one of this antelope's most striking features. The Black coat characteristic of adult males gives the species the name " Black Buck " Females and young males however are an orange tan. Fawns are brown at birth passing through a lighter, creamy stage before developing the orange tan. Black buck of all ages have a sharply defined white patch around each eye and one on the chain. The chain patch sometimes extends into the dorsal tip of the muscle between the nostrils. The ventral body surface and the inner surfaces of the legs are also white. Only male black buck develop horns. The horns are ringed and spiralled and diverage from the bases to form a Tall " V " above the head. Point Calimer is vulnerable to the cyclones which the north-eastern monsoon often throws against the coast such storms with their attendant flooding are said to cause heavy mortality among Black Buck in Point Calimere Sanctuary.

The Black Buck thrives best in places where the vegetation is not too dense, the climate is not too moist, the temperature does not fall too low and the topograph is not too rugged.

Point Calimere Sanctuary is noted for its incredible congregations of bird life both resident and migrants.

The influx of the wintering migrants into the Prime habitat increases competition among the species of both migrants as well as resident populations. Apart from water birds, there is also an influx in land birds which required different types of habitat structure for wintering populations. Both the wintering types disperse through cut the peninsula during the winter months. So as an attempt is being made to study the prime habitat types of the marine eco-system of Point Calimere, to assess the movement and population structure of the avifauna. More accurate studies on bird migration can even forecast weather features such as direction of wind, temperature, humidity, etc., as an important role in announcing the arrival of certain migrant such as Indian Pitta and a few warders. With a view to study the population and movement of India birds avifauna field research stations were started at two important bird sanctuaries in India, namely Bharatpur Bird Sanctuary and Point Calimere under the eminent leadership of world renowned orinthologist Dr. Salim Ali. A team of scientists is working in the field camps. This project is a joint effort of the Ministry of Agriculture, Government of India and Bombay, Natural Historic Society by using of funds.

Extensive salt swamps that stretch for about 56 kilometres from Point Calimere south to Adirampattinam provide an excellent wintering ground for a large number of warders. The scrub jungle which forms a part of declared sanctuary provides a gathering point for the migrant before they take off further south to Ceylon. To ascertain the movement pattern of birds in the sub-continents trapping camps are to be conducted at various places, more or less equally distributed in the country. At these camps birds are trapped and examined for rings and details are recorded. Now rings are put on the birds legs which were not seen carrying any rings.

In the field station which is situated at Point Calimere, a miniature field laboratory is functioning. Attach to the laboratory a museum also is set up to store the specimens collected by the Avifauna Research Staff.

13. *Wild Life Census* :

Carrying out Wild Life Census is a very essential aspect in the scientific management of Sanctuaries. Once the carrying capacity is decided then the census figures will be of great avail to translocate the surplus animals to other areas. Again census figures are a must to know the population structure of the species. As per census conducted by Forest Department Personnel and Avifauna Project (B. N. H. S.) Staff on 31st March 1981 the total number of Black Bucks is 1,546. During 1977, 1978, 1979 and 1980 the number of Black Bucks was 659, 688, 983 and 1,108, respectively. The figures show that there is a regular gradual but steady increase in their populations during the last four years.

14. *Translocation* :

At present the question of translocation does not arise since the population is within the carrying capacity of the Sanctuary.

15. *Control of over population of Black Buck or Spotted Deer* :

As per the census figure it is definitely on the increase in the Sanctuary but within the carrying capacity. Hence the question of control of the over population does not arise.

16. *Netting, dulling and auctioning the Spotted Deer* :

At present the visitors are using two paths for their entry inside the Sanctuary, one at Ramarpatham near Agasthiampalli (proposed new check-post) and the other through the Kodiyakadu village, the path leading to light house. Entry fees are collected as detailed below :—

Visitors (Adults)	Rs. 2 per head.
Visitors (Students)	Re. 1 per head.
Motor cycle	Rs. 3 each.
Scooter	Rs. 3 each.
Still camera	Rs. 3 each.
Car	Rs. 5 each.

The department jeep is also utilised by the visitors on hire basis at Rs. 2 per kilometre for visiting inside the sanctuary area. Now a Mini Bus is also purchased for this purpose.

It is proposed to have regular entry and exit after the chain link fence is formed on the western side of Kodiakadu Reserved Forest and thereby regulate the entry. It is also proposed that the visitors should take guides from the Forest Department and thereby the scating of animals can be avoided.

18. *Staff*:—

The strength of the Range staff at present are as follows:—

Range Officer	1	
Foresters	3	(2 for selections and one for implementing the Wild life Act.)
Forest guards	6	(2 for check-posts, two for Kodiakadu and for Point Calimere and one for Talanayar.)
Watchers	6	(Kodiakadu 3 numbers, Muthupet 1 number and Talanayar 2 numbers.)

A part from the above, two posts of Foresters sanctioned originally in G.O. Ms. No. 1189, Forests and Fisheries, dated 14th December 1977 for the development of Point Calimere Sanctuary is kept vacant since 1st August 1980 and orders of the Government are awaited. This may be pursued and the posts filled up early.

The Range Officer do not have any Range clerk or Basic Servant at present. Moreover due to sudden transfer of this Sanctuary from the control of the Wildlife Warden, Madras to Wildlife Warden, Thanjavur and due to surrendering one post of Assistant to Social Forestry Division, Thanjavur the office work in the District Office has been considerably increased and could not be coupe up as the office is understaffed. To make up the loss of one Assistant and to come up with increased works on paint calimer sanctuary the following additional staff may be got postrd by submitting suitable proposals.

1. One post of Junior Assistant in the Range Office. Vedaraninam.
2. One post of Basic servant to the Range Offices.
3. One post of Assistant in the District Office.
4. One post of Draughtsman Grade II in District Orfice.
5. One post of Record Clerk for Dsstrict Forest Officer's Office,

CHAPTER-IV

TOURISM

18. *Introductions* :

The Sanctuary is being visited by a large number of tourists both from home and abroad. It is easily approached from Thiruthuraipoondi Railway Station. The Railway line runs through the Sanctuary, the terminus being Point Calimere Sanctuary. For road transport is just 12 kilometres from Vedranyam.

But however a lot remains to be done to attract the visiting crows going into the Sanctuary. The roads inside the Sanctuary is only fair weather roads and the tourists are different to take their vehicles inside the sanctuary. Lack of Publicity by department is also one of the reasons. Now due to publicity the inflow of tourists has increased four times than that of last year. Again we do not have look outs or watch towers. All these are reasons for low percentage of tourists visiting the sanctuary.

20. *Proposals for Tourist facilities inside the sanctuary* :

Proposals have been made to construct 5 watch towers at different part of the sanctuary. Also proposals have been made to provide 2 guides to accompany vehicles or pedestrian tourists. Again boards and boardings etc., will be erected indicating the highlights and attractions in the Sanctuary. These measures will go a long way to attract tourists to the Sanctuary. (For details of tourists who visited the sanctuary, please see appendix-I.)

21. *Children's Corner* :

It is proposed to establish a children's corner within the Rest House accompanied with facilities like the midget train, Pony joy ride, play things like sloping towers, etc.

22. *Proposals for more facilities to the tourists at the Children's Corner* :

1. Laying out gardens with lawns.
2. Providing seating facilities like benches, round structures etc.
3. Provide 5 numbers Umbrella-shaped rests supported one pipe.

FINANCIAL FOREST CAST.

FINANCIAL YEAR 1982–83

(Non-Requisiting)

Details of works.	*Amount proposed.*
(1)	(2)
I. Facilities for bunds, well and transportation of water and pumping of water :	
(*a*) Construction of earthern bunds over 4 Kilometres at Rs. 9,000 per kilometre	36,000
(*b*) Construction of check dame at Rs. 25 each	5,000
(*c*) Sinking wells in Sandy soil at Rs. 5,000 each	10,000
(*d*) Maintenance of trenches over 3,630 Metres	3,000
II. Habit improvements :	
(*a*) Maintenance of existing Nature trails over 19.2 Kilometres	5,000
(*b*) Experimental improvements of natural fodder potential by formation of horring home pattern drain after topographic survey over one of the extension blocks.	5,000
(*c*) Gap planting with tree sapplings of fodder valve of fruits value at Rs. 2,000 per hectare.	10,000
(*d*) Raising avenue trees for shade and aesthetic or from Agasthampalli to Kodikarai with tree guards at Rs. 5,000 per Kilometre.	10,000
(*e*) Clearing and uprootal of prosospis at Rs. 500 per hectare	5,000
(*f*) Forming a fair weather road from Poonarai Illam to Light house over 5 Kilometres at Rs. 5,000 per Kilometres.	25,000
III. Construction Works :	
(*i*) Residential	..
(*a*) Construction of Forester's quarters at Rs. 5,00, 000 each	
(*ii*) *Non-Residential :*	
(*a*) Construction of compound wall on the northern side over 3,600 metres length 2.7 metres height.	10,00,000
(*b*) Chain link fencing on 27M height concrete posts on the western side of Kodiakadu R.F. over a length of 7 Kilometres at Rs. 100.	7,00,000
(*c*) One office building to the Range Office	60,000
(*d*) Construction of compound wall around Poonarai Illam over 230 Metres	60,000
(*e*) Construction of one check post at Agasthampalli	15,00
(*f*) Construction of watch towers at Rs. 10,000 each	10,000
(*g*) Erection of boards,hoarding on cement concrete slabs and writing for publicity including road sign and direction boards at Rs. 2,000 per year.	2 000
(*h*) Forming a Children's corner by providing required play things, seating platforms, resting sheds Umbrella shaped shelters, Latrines etc.	10 000
IV. Vehicles :	
(*a*) Purchase of rearing boats at Rs. 15,000 each	30,000

Details of works. (1)	*Amount proposed.* (2)
	RS.
V. Equipments :	
1. Binaculars—5 Nos.	
2. Camera—1 No.	
3. Camera accessories (*i.e.*) Tale-lens, colour lens, etc., in a set	
4. Spotting cap 1 No.	68,000
5. Blow pipe and drainage	
6. 16 MM Movie camera with accessories—1 No.	
7. For mobilisation, Tranquillizer with accessories	
Total ..	21,19,000

FINANCIAL YEAR 1983–84

(Non-Recurring)

I. Facilities for bunds, well and transportation of water and pumping of water :	
(*a*) Construction of 6 water troughs at Rs. 2,000 each	12,000
(*b*) Sinking of wells in Sandy soil at Rs. 5,000 each	5,000
II. Habitat improvement :	
(*a*) Gap planting with tree mapplings of fodder value or fruits value at Rs. 2,000 per hectare.	10,000
(*b*) Raising avenue trees for shade and aestheti from Agasthampalli to Kodikarai with tree guards. at Rs. 5,000 per Kilometre.	10,000
(*c*) Clearing and uprootal of prosopis at Rs. 500 per hectare	5,000
III. Construction works :	
(*i*) *Residential* :	
(*a*) Construction of Forester's quarters at Rs. 50,000 each	50,000
(*b*) Quarters for the Ranger at Kodikarai	60,000
(*c*) Combined quarters for the Forest Guard and watcher at Rs. 45,000 each including quarters for Jeep, Van, Boat—drivers, peon watchman, etc.	90,000
(*ii*) *Non-residential* :	
(*a*) Construction of one Laboratory for Research	50,000
(*b*) Construction of Garage for parking Jeep, trailer Van including washing platform.	30,000
(*c*) Construction of Watch towers at Rs. 10,000 each	10,000
(*d*) Erection of boards/hoarding on cement concrete slabs and writing for publicity including road sign and direction boards at Rs. 2,000 per year.	2,000
(*e*) Forming a Children's corner by providing required play things seating platforms, resting sheds umbrella shaped shelters. Latrines, etc.	10,000
IV. Vehicles	
V. Equipments :	
(*a*) Survey instruments	1,000
(*b*) Net to catch deers	1,000
	3,46,000

FINANCIAL YEAR 1984–85.

(Non-recurring)

Details of works.	*Amount proposed.*
	RS.
I. *Habitat improvements* :	
(*a*) Gap planting with tree saplings of fodder value or fruits value at Rs. 2,000 per hectare.	10,000
(*b*) Raising avenue trees for shade and aesthetic from Agasthampalli to Kodikarai with tree guards at Rs. 5,000 per Kilometre.	10,000
(*c*) Clearing and uprootal of prosopis at Rs. 500 per ha.	5,000
II. *Construction works* :	
(i) Residential.	
(*a*) Construction of Forester's quarters at Rs. 5,000 each	50,000
(*b*) Combined quarters for the Forest Guard and watcher at Rs. 45,000 each including quarters for Jeep, Van, Boat drivers, peon, watchman, etc. ..	90,000
(ii) *Non-residential:*	
(*a*) Construction of Watch towers at Rs. 10,000 each	10,000
(*b*) Erection of boards/hoarding on cement concrete slabs and writing for publicity including road sign and direction boards at Rs. 2,000 per year.	10,000
(*c*) Forming a Children's corner by providing required play things, seating platforms, resting sheds, Umbrella shaped shelters, latrine, etc.	10,000
(iii) *Equipments*—	
1. Purchase of a Telescope	1,00,000
Total ..	2,87,000.00

FINANCIAL YEAR 1985–86.

I. *Habitat improvements* :	
(*a*) Gap planting with tree saplings of foder value or fruits value at Rs. 2,000 per hectare.	10,00
(*b*) Raising Avenue trees for shade and aesthetic from Agasthampalli to Kodikarai with tree guards.	5,000
(*c*) Clearing and uprootal of prosopis at Rs. 500 per hectare	5,000
II. *Construction Works* :	
(1) Residential—	
(i) Combined quarters for the forest guard and watcher at Rs. 45,000 each including quarters for Jeep, Van, Boat drivers, peon watchman, etc.	90,000
(ii) *Non-residential*—	
(*a*) Construction of watch towers at Rs. 10,000 each	10,000
(*b*) Erection of boards/hoarding on cement concrete slabs and writing for Publicity including road sign and direction boards at Rs. 2,000 per year.	2,000
(*c*) Forming a children's corner by providing required play things, seating platforms, resting sheds, Umbrella shaped shelters, latrines, etc.	10,000
Total ..	1,32,000

FINANCIAL YEAR 1986–87

(Non-Recurring.)

Details of works.	*Amonnt proposed.*
	RS.
(1)	(2)
I. *Habitat improvements* :	
(*a*) Gap planting with tree saplings of fodder value of fruits value at Rs. 2,000 per hectare.	10,000
(*b*) Clearing and uprootal of prosopis at Rs. 500 per hectare]	50,000
II. *Construction works* :	
(i) *Residential;*	
(*a*) Combined quarters for the Forest guard and watcher at Rs. 45,000 each including quarters for Jeep, van, Boat, drivers, peon, watchman, etc.	90.000
(*b*) Erection of Boards/hoarding on cement concrete slabs and writing for publicity including road sign and direction boards at Rs. 2,000 per year.	2,000
(*c*) Forming a Children's corner by providing required play things, seating platforms, resting sheds, Umbrella shaped shelters, latrines, etc.	10,000
Total ..	1,27,000

ABSTRACT.

Financial Implication—Non-Recurring.

1 Facilities for bunds, well and transportation of water and pumping of water ..	71,000
2 Habitat Improvement	1,45,000
3. *Construction Works—*	
(i) Residential	5,70,000
(ii) Non-Residential	20,25,000
4 Vehicles]	30,000
5 Equipments	1,70,000
Total ..	30,11,000

APPENDIX-1.

Rules to prohibit huntings, shooting etc., within the limits of Point Calimere Wildlife Sanctuary.

(*G. O. Ms. No.* 1821, *Agriculture*, 13*th June* 1967)

S.R.O. No. A140 of 1968.—In exercise of the powers conferred by clause (*h*) of section 21 and clause (*e*) of Section 63 of the Madras Forest Act, 1882 (Madras Act V of 1882) the Governor of Madras hereby makes the following rules to prohibit the hunting, shooting, fishing poisoning of water and setting up of traps or snares within the limits of the area specified in the schedule which is constituted as Wild life sanctuary to be called the Point Calimere Wildlife Sanctuary.

Rules.

1. *Short tile.*—These rules may be called the rules to prohibit hunting, shooting, etc., within the limits of Point Calimere Wild life Sanctuary.

2. Definition : In these rules—

(i) 'District Forest Officer' means the State Wildlife Officer.

(ii) ' Government ' means the Government of Madras and

(iii) 'Sanctuary' means the point Calimere Wildlife Sanctuary.

3. The boundaries of the Sanctuaries shall not be altered nor shall its ownership or character be changed without the previous sanction of the Government.

4. The hunting, shooting or capturing of any wild animal or bird or fishing or setting up of traps or snares with the sanctuary is prohibited:

Provided that nothing in this rule shall prevent the Distrit Forest Officer with the previous approval of the Chief Conservator of Forests from arranging for the destruction within the Santuary of beats dangerous to human life or of Wild dogs or other forms of Wildlife which may become no numerous as to justify destructions.

5. Except with the permission of the District Forest Officer or one other than a Forest Officer shall carry any fire arms or explosives into the Sanctuary.

6. The Chief Conservator of Forests may with the previous approval of the Government frame regulations for the management and control of the Sanctuary.

7. No person other than an officer of the Forest, Police or Revenue Department on duty shall enter the Sanctuary, halt in it motor along the roads, photograph the Wildlife or exercise any other privilege except under a permit to be obtained from the District Forest Officer or any one duly authorised by him in this behalf in accordance with any regulations which may be framed for the purpose under rule 6:

Provided that it shall not be necessary to take out permits to the use of roads and path running through the Sanctuary which have been declared as right of way open to men and cattle.

8. Any Forest Officer not below the rank of Forest Guard may at any time when a vehicles is passing through the Sanctuary call upon the driver of the vehicle to stop the vehicles and to keep it at rest for such time as may be necessary to enable him to make reasonable examination of the contents of the vehicle.

9. Forest operations shall continue within the Sanctuary in the normal manner and contrac tors and their employees shall during the period they are engaged upon Forest operations, be required to take out free permits for the purpose of entering and halting in the Sanctuary.

10. The orest Officer shall continue to be responsible for the protection of Wild life within the Sanctuary as they are for that purpose under the control of the District Forest Officer.

SCHEDULE.

Boundary statement of the Point Calimere Wild Life sanctuary Thanjavur, District-Thiruthuraipoondi taluk, No. 133, Kodiakadu village.

Name of the Block—Point Calimere Wild Life Sanctuary.

The proposed Sanctuary comprises the areas detailed below :—

	Acs.	Hectares.
Kodiakadu Reserved Forest	3,645.00	1,457.13
Kodiakadu Extension I Reserved Forest	534.30	236.47
Kodiakadu Extension II Reserved Forest	25.12	10.12
Kodiakadu Extension III	17.40	7.40
Total ..	4,271.82	1,728.81

Boundaries.

North.—Starting from Post No. 1 at the North-west corner of Kodiakadu Reserved Forest (notified as Reserved Forest under section 16 of Madras Forest Act in Revenue Department notification No. 188, dated 4th May 1892. Published at page 598 of Part-I of the *Fort St George Gazette* dated 10th May 1892) the boundary runs towards east along the northern boundaries of Kodiakadu extension II and Kodiakadu Extension III Reserved Forests (notified as Reserved Forests under section 16 of Madras Forest Act in notification No. 475, dated 23rd May 1938, Published at pages 779 and 780 of *Fort St. George Gazette*dated 31st May 1938) thence east along the notified northern boundary of the Kodiakadu Reserved Forest (Post No. 2) and thence east alon the northern boundary of the Kodiakadu Extension I Reserved Forest notified as Reserved Forest under section 16 of Madras Forest Act in Notification No. 475, dated 23rd May 1938, Published at pages 779 and 780 of Fort St. George Gazette, dated 31st May 1938 to the Bay of Bengal at its north-east corner of Kodiakadu Extension I Reserved Forest.

East.—Thence Soutn along the Bay of Bengal to the Point which a straight line with a brearing of 70, 458. from the cairn at the south-east corner of the notified boundary of the Kodaikadu Reserved Forest and on the eastern boundary Kodiakadu village between theodolite stones 58 and 59 an a distance of 14 chains (281.64 metres) from the latter, cuts it (theodolite stone 59 is at the south-east corner of Kodiakadu village).

South.—Thence a straight line west to the cairn at the north-east corner of the Kodiakadu Reserved Forests, 14 chains (281–64 metres) north west of theodolite stone No. 50, thence a straight line- southwest to Post No. 4 at a boundary of stone on the south boundry of Kodiakadu Village about six chains (130-70) metres west of the Marine buildings and thence along the said village boundary to post No. 8 at the south-east corner of the Village forest boundary.

West.—Thence a straight line north for about 92 chains (1,850.75 metres) to post to 11 thence a straight line west for 58 chains (1,66,77.metres) to post No. 13 on the eastern margin of the salt swamp, thence along the said margins to post No.17 about 13 chains (261.52 metres) due south of Kollappa Naicken Mandapam thence strainght line north-east to post No.18 on the said margin swamp about 4 chains (86.56 metres) north-east of the said Mandapam, thence sgain along the east margins of the swamp to the starting point.

Remarks.—(1) A block of 28 acres (11.33 hectares) contraining of 6 pattse at Kahcukuttgai patta lands excluded from the Kodiakadu Reserved Forest and treated as Enclosures.

(2) An area of 85.65 acres (10.83 hectares) marked in Kodiakadu Resrve Forest as Railway line is excluded from the forests (it was disreserved during 1935 and given to theRailway Depary. ment).

APPENDIX II.

1. The State Wildlife Officer, Madras shall ex-officio, be in the control of the Point Calimere Wildlife Sancturay.

2. He shall with the previous approval of the Chief Conservator of Forest prescribe the fees to be charged for the various amenities provided in the Wildlife Sancturay.

3. On payment of the prescribed fees, the District Forest Officer or any other Officer duly authorised by him in this behalf may grant a permit in the prescribed form.

4. The holder of permit must produce it for inspection on demand by any Forest, Revenue or Police Officer as notified in the permit.

Permit for entry into the Point Calimere Wildlife Sanctuary :

1. Name of person to whom permit is issued.
2. Occupation and address.
3. Permanent address.
4. Fee.
5. Period of validity.
6. Nature of privilege to be exercised.
7. Name of persons permitted, to accompany the permit holder.
8. Description of fire-arms if any allowed to be carried.

CONDITIONS.

1. This permit is issued subject to the rules constituting the point Calimere Wildlife Sanctuary and regulations framed thereunder.

2. This permit must be shown on demand,to any Forest Officer not below the rank of Forest guard or any Revenue Officer not below the rank of Revenue Inspector or to any Police Officer not below the rank of Head Constable.

3 This permit is not transferrable

4. The holder of the permit shall not disturb any Wild animalwithin the sanctuary and shall not take into the sanctuary any instrument capable of disturbing game other than that allowed under this permit.

5. The holder of this permit, shall return it to the issuing Officer when it is no longer required or in the even of its cancellation, immediately, after cancellation.

6. Infrigment of any of the above conditions, may involve the cancellation of the permit. The holder of the permit may also be liable to the penal ties prescribed under section 21 of the Madras Forest Act, 1882.

7. This permit may be cancelled at any time by the State Wildlife Officer without assigning any reasons whatsoever.

A. SOMASUNDARAM,
Deputy Secretary to Government.

AMENDMENT TO RULES TO PROHIBIT HUNTING AND SHOOTING ETC., WITHIN THE LIMITS OF POINT CALIMERE WILDLIFE SANCTUARY.

(*G.O. Ms. No.* 61, *Forests, and Fisheries,* 1*st October* 1973).

S.R.O. No. 979 of 1973.—In exercise of the powers conferred by clause (*b*) of section 21 and clause (*e*) of Section 63 of the Tamil Nadu Forest, Act, 1882, (Tamil Nadu Act V of 1982). The Govrnor of Tamil Nadu hereby makes the following amendment to the rules to prohibit hunting, shooting, etc.,within the limits of Point Calimere Wildlife Sanctuary, published with the Agriculture Department Notification No. A 140 of 1967 dated the 13th June 1967, at pages 132–134 of Part—V of the *Fort St. George Gazette*, dated the 6th March 1986.

AMENDMENT.

In the said rules, rules 8 shall be renumbered as- sub-rule (i) of that rule and after sub-rule (i) as so renumbered, the following sub-rule shall be added, namely :

(ii) the driver of any vehicle passing in or passing out of the Agasthiampalli Forest Check-post situated on the road leading to the sancturary should authenticate in the register, maintained at the check-post filling in his name, address, vehicles number and other particulars as may be required.

K. CHOKKALINGAM,
Special Secretary to Government.

(*Ref.* No. 1045/70 W2). Office of the Chief Conservator of Forests, Madras-6, dated 2nd February 1970.

THIRU P. R. MOHAMMED BASHEER, I.F.S.,
State Wild Life Officer.

Copy of—G.O. Ms. No. 3763, Agriculture, dated 31st December 1969.

SUBJECT.—Forests—Wildlife—Thanjavur District—Thiruthuripoondi Taluk—Closure to shooting Notification amendment—Issued.

READ : the following.—

1. G.O. Ms. No. 1870, Food and Agriculture, dated 22nd March 1962.
2. G.O. Ms. No. 1205, Agriculture, dated 6th April 1968.
3. G.O. Ms. No. 2019,Agriculture, dated 25th June 1962.
4. Government Memorandum No. 52254. DIV-69;5, dated 12th June 1969.
5. From the Chief Conservator of Forests Letter No. 3533/69W2, dated 18th October 1969

ORDER :

The notification appended to this order will be published in English and Tamil in the *Fort. St. George Gazette* and in the District Gazette of Thanjavur District.

2. Six copies of the notification are sent to the Director of Tamil translation for translation of the notification into Tamil. He is requested to furnish the Tamil Translation to the Director Stationery and Printing immediately.

3. The Director of Stationery and Printing is requested to furnish eight printed copies of the notification to the Chief Conservator of Forests and four copies to the Government and to report the page number and date of the *Fort St. Geyrge Gaoette* in which the notification has been published.

NOTIFICATION.

In exercise of the powers conferred by section 3 of the Wild Birds and animals protection Act 1912 (Central ActVIII of 1912) the Governor of Tamil Nadu hereby makes thefollow ing amendment to the late Food and Agriculture Department Notification II-2500 of 1962 dated the 22nd May 1962 published at page 1005 of Part-II section 4 of the *ort St. George Gazette*, dated the 6th June 1962 as subsequently amended :—

AMENDMENT.

In the said notification in the proviso for the expression 'November 1968 and February 1969' the expression 'November 1969 and February 1973' shall be substituted.

Copy of Government of Tamil Nadu G.O. Ms. No. 1168, *dated* 12*th April* 1971

(*communicated in Chief Conservator of Forests, Madras D.Dis. No.* 23250/70, *dated 6th July* 1971).

ABSTRACT.

(Forest—Wildlife—Prevention of issuing crop protection gun licences in a 15mile belt area around Wildlife sanctuaries proposals of the Chief Conservator of Forests—Orders passed).

G.O. Ms. No. 1169, *Agriculture Department, dated* 12*th April* 1971.)

READ : Again—

1. G.O. Ms. No. 823, Food and Agriculture, dated 25th February 1959.
2. G.O. Ms. No. 22, Agriculture, dated 31st January 1969.

READ ASLO :—

1. From the Government of India, Ministry of Agriculture community development and co-operation (Department of Agriculture) letter No. 25-64-69 FD (IMWE) dated June 1969.
2. From the Chief Conservator of Forests Letter No.13035 695WE,dated 6th August 1969.
3. From the Chief Conservator of Forests, letter No. D. Dis. 13055 69/W2 dated 27th November 1969.
4. From the Board of Revenue (Land Revenue), B.P. Rt. No. 5(L), dated 2nd January1971.

ORDER :

In the G.O. first read, above, with a view to popularise the Bamboo rockets to scars wild life, issue of crop protection gun licences were banned in the following locarities for a period of one year as an experimental measures :—

1. Vedaranyam sub-taluk, Thanjavur district.
2. Jowalagiri.
3. Ahchetty.
4. Masinggudi in the Nilgiris District.

8. The above, G.O. second read above, the ban was ordered to be continued upto 31st December 1970 and was also extended to the taluks of Vellore, Gudiyatham andP olur of North Arcot District and to the villages in Sathyamangalam sub-aluk Bhavani, Pollachi and Udumalpet t aluks of Coimbatore District up to 31st December 1970.

3. In their letter first read above, the Government of India have communicated the suggestion of the Prime Minister that no crop protection licences should issued in a 15 mile belt around sanctuaries and Wild parks and that the existing ones should revoked, as there is no other way of saving animals, which stray out of their protected confines and that, crop protection in this 15 mile belt should be the duty of the State as in Africa.

4. The Chief Conservator of Forest, who was consulted in the matter, has reported that the issue of crop protection guns within a radius of 15miles around Wildlife sanctuaries may be banned as suggested by the Prime Minister and that, instructions may be issued to the Collectors in the matter. He has also reported that the Forest Department will help the agriculturists in the area in scoring away the animals straying into the fields be means of crackers and rockets.He has also stated that the crop protection gun licences are issued by the Collectors and that, there is no need to issue draft notification under the Game rules for banning the issue of crop protection guns. The Board of Revenue (Land Revenue) has in consultation with the Collectors of Thajavur, The Nilgiris, Chingleput and District Revenue Officer, Tirunelveli, recommended that the ban ordered in the G.O. read above may be made permanent and the, grant of crop protection gun licences within the radius of 15 miles from the Wildlife sanctuabeies in Tamil Nadu may alsobebanned.The Government accep tthe proposals of the Chief Conservator ofForests and direct that the ban on the issue of crop projection gun licences order d in G.O. Ms. No. 823, Foof and Agricu ture, dated 25th February 1959 and G.O. Ms. No. 221, Agriculture, dated 31st January 1969 be made permanent and that the grant of crop protection licences within a radius of fifteen miles in the Wild life sanctuaries in Tamil Nadu may also be banned, in the interest of protection of Wildlife in these areas.

5. The Board of Revenue (LandRevenue) is requested to issue suitable instruction to the Collectors concerned to stop the issue of crop protection licences in these ares and also with a radius of 15 miles in the Wildlife sancturies and to send a copy of the instructions to the Government for information . The Chief Conservator of Forests is requested to issue suitale instructions to his subordinate officers to help the agriculturist in these areas in scaring sway the animals straying into the fields.

(By order of the Govenor).

U. P. GOVINDASAMY,
Deputy Secretary to Government.

Amendment to rules to prohibit hunting, shooting etc., with the Limits to Point Calimere Wildlife Sanctuary

(*G. O. Ms. No.* 150, *Agriculture dated* 27*th January* 1970).

S. R. O. No. A 324 of 1970.—In exercise of the powers conferred by clause (*h*) of Section 21 and clause (*e*) of Section 63 of the Tamil Nadu Forest Act, 1882 (Tamil Nadu Act V of 1882), the Governor of Tamil Nadu hereby makes the following amendments to the rules to prohibit the hunting, shooting, flashing, poisioning of water and setting up of traps or snares with the limits of the Point Calimere Wild Life Sanctuary, published with the Agriculture Department Notification S.R.O. No. A. 140 of 1968 dated the 13th June 1967 at pages 132, to 134 of part V of the *Fort St. George Gazettee* dated the 6th March 1968.

Amendments.

In the said rule—

(i) the rule mentioned in column (e) below shall bear the marginal headings shown against them in the corresponding column (b) :

Rule number. (a)	*Marginal heading.* (b)
3	Alteration of boundary.
4	Prohibition of hunting etc.
5	Prohibition of carrying.
6	Fire arms or explosives.
7	Power of frame regulations.
	Obtaining of permit to enter sanctuary.
8	Powers of Forest Officer to stop vehicles passing through Sanctuary.
9	Continuance of Forest operations within the Sanctuary with permits.
10	Responsibility of Forest Officers for protection of Wildife.

(2) in sub-rule (ii) of rule 2 for the word 'Madras' the words 'Tamil Nadu' shall be substituted.

(3) in rule 3 for the words 'The boundaries of the Sanctuary' the words 'The boundaries of the Sanctuary given in the schedule, shall be substituted.

(4) in rule 7 for the words 'under a permit to be obtained from the District Forest Officer' the words 'under a permit in the form shown in the Appendix to the rules to be obrained from the District Forest Officer' shall be substituted.

(5) after rule 7 the following rule shall be inserted as new rule 7A namely:

" 7A The conditions for the issue of permit are as follows :

(i) This permit is issued subject to the rules constituting the Point Calimere Wildlife Sanctuary and regulations framed thereunder.

(ii) This permit should be shown on demand to any Forest Officer not below the rank of Forest Guard or to any Revenue Officer not below the rank of Revenue Inspector or to any Police Officer not below the rank of Head Constable.

(iii) This permit is not transferrable.

(iv) The holder of the permit shall not disturb any wild animals within the Sanctuary and shall not take into the Sanctuary any instrument capable of disturbing game other than that allowed under this permit.

(v) The holder of this permit shall return it to the issuing officer when it is no longer required or in the event of its cancellation, immediately after cancellation.

(vi) Infringement of any of the above conditions may involve the cancellation of the permit. The holder of the permit may also be liable to the penalties prescribed under section 21 of the Tamil Nadu Forest Act 1882.

(vii) The permit may be cancelled at any time by the State Wildlife Officer without assigning any reason whatsoever.

6 For the words " Appendix II ' the word "Appendix' shall be substituted.

7. In Appendix II, the conditions 1 to 7 shall be deleted.

R. PASUPATHI,
Additional Secretary to Government.

(True copy)

Copy of Notification by Government.

APPLICATION OF CERTAIN PROVISIONS FOR CERTAIN SPECIES OF WILD WATER FOWL AND PERCHING BINDS UNDER WILD BIRDS AND ANIMALS PROTECT, ON ACT.

(*G. O. Ms. No.* 1870, *Food and Agriculture*, 22*nd May* 1962.)

In exercise of the powers conferred by sub-section (2) of Section 2 of the Wild Birds and animals protection Act 1912 (Central Act VIII of 1912) the Governor of Madras hereby applies the provisions of the said Act to the following species of Wild water fews and perching birds, which in the opinion of the State Government, it is desirable to protect and preserve :

1. Gulls.
2. Terns.
3. Storks.
4. Sand pipers.
5. Plovers.
6. Stints.
7. Pelicans.
8. Teals.
9. Moorhen.
10. Stilts.
11. Curlews.
12. Pittas.
13. Koels.
14. Plamingoes.
15. Flycatcher.
16. Red shanks.
17. Kora.
18. Godwits.
19. Turnstone.
20. Wiretailed Swallow

Declaration of whole year to be a close time in respect of certain wild birds in entire taluks of Nagapattinam and Thiruthuraipoondi in Thanjavur district under Wild birds and animals protection Act.

In exercise of the powers conferred by section 3 of the Wild Birds and Animals protection Act, 1912 (Central Act VIII of 1912 the Governor of Madras hereby declares the whoul year to be a close time within the entire taluk of Nagapattinam, Thiruthuraipoondi in Thanjavtre district for the the following species of wild water fowl and perching Birds loss to which he said Act, applies :

1. Gulls.
2. Terns.
3. Storks.
4. Sand piper.
5. Plovers.
6. Stints.
7. Pelicans.
8. Teals.
9. Moorhen.
10. Stilts.
11. The curlew
12. Pitas.
13. Koels.
14. Plamingoes.
15. Fly catchers.
16. Red shanks.
17. Kora.
18. God wits.
19. Turns tone.
20. Wire-tailed swallow.
21. Egrets.
22. Herons.
23. Spoon-bills.
24. Snipes.
25. Green pigeons.
26. Shovellers.
27. Spot-bills.
28. Ruddy-shelderake.
29. Pintails.

V. VASUDEVAN,
Deputy Secretary to Government.

(True copy)

APPENDIX

(*a*) BLACK BUCK (ANTELOPE CERRICARNA)

Serial number and Agency and Methods.	Date.	Males		Females.		Year lings.	Unsexed.	Total.
		Adults.	Sub-adults.	Adules.	Sub-adults.			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1 Tiruchi Wildlife Conservation Society. ..	28-5-77	..	..	..	..	..	..	659
2 Forest Ranger, Vedaranyam and staff. ..	27-6-78	424	..	559	..	59	..	983
3 Forest Ranger Vedaranyam and staff. ..	26-10-79	125	..	504	..	59	..	688
4 Forest Ranger, Vedaranyam and staff. ..	13-2-80	225	96	469	223	95	..	1,108
5 Tirunelveli youth club headed by Wildlife warden Kalakadu.	18-1-81	214	132	853	183	107	3	1,492
6 Forest Ranger ..	31-3-81	306	83	829	177	151	..	1,546

APPENDIX II.

SPOTTED DEER (AXIS ASIX).

Agent and methods.	Date/ amount.	Males.		Females.		Unsexed.	Yearlings.	Total.
		Adults.	Sub-adults.	Adults.	Sub-adults.			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Forest Ranger Vedaranyam and staff. ..	1979	122	..	203	..	..		555
Census not taken ..	1980	..	..	..	..	..		..
Forest Ranger, Vedaranyam and Staff. ..	1981	159	57	222	85	11	26	559

APPENDIX III.

CHECK-LIST OF RESIDENT BIRDS FOUND IN THE SANCTUARY.

Serial number.	Species.	Common name.
(1)	(2)	(3)
1	Ardea cinerea	Grey Heron.
2	Egretta gularis	Indian Reer heron.
3	Elanus caerules	Black Winged kite.
4	Milrus migrans	Ponish or Black kite.
5	Haliastur indus	Brahminy kite.
6	Accipiter badius	Bikro.
7	Accipiter nisus	Sprrow-hawk.
8	Accipite virgatus	Bear sproow hawk.
9	Haliaeetus leucagastero	White bellied sea eagle.
10	Neophren percenopternus	Egiptian or Sqavenger vulture.
11	Amaurornis phoenicurus	White breasted Water hen.

A PPENDIX aII

BLACK KIST OF RESIDENT BIRDS FOUND IN TME SANCTUARZ

Serial number.	*Species.*	*Common name.*
(1)	(2)	(3)
12	Vanellus indicus	Red wattled lapwing.
13	Vanellus malabaricus	Yellow wattled lapwing.
14	Charadrius mongolus	Lesser sand plover.
15	Gelochelidon nilotica	Gullbilled Tern.
16	Hydroprogne caspia	Caspian Tern.
17	Sterna albifrone	Little Tern.
18	Streptopelia chinosi	Spotted dove.
19	Psittacula Kramasri.	Rose ringed parakeet.
20	Clamator Jocobinus	Pied crested cuckoo.
22	Eudynamya scalopacea	Koel.
22	Rhopodytes viridirostris	Small greenbilled melooha.
23	Centropus sinansis	Crew pheassant.
24	Athena brama	Spotted owlet.
25	Asio flamneus	Shorteared owl.
26	Caprimulgus indicus	Indian jungle. Night jar.
27	Caprimulgus europacus	European Night Jar.
28	Caprimulgus asiaticus	Common Indian Night jar.
29	Cypaiurus parvus	Plam Swift.
30	Alcede atthis	Common kingfihser.
31	Halcyon qmyrnensis	White brested king fisher.
32	Merops orientalie	Green Bee eater.
33	Corsoias beneghalensis	Indian Roller.
34	Upupa epopa.	Heopee.
35	Dinopium benghalense	Lesser Goldenbacked wood packer.
36	Mirafra erythraptera	Red winged bush lerk.
37	Eremopterix grisea	Ashy crowned Finah lark.
38	Alanda gulgula	Eastern sky lark.
39	Dicrurus adimilis	Black drnnge.
40	Acridotheres tristis	Common myna.
41	Dendrocitta Vegebunda	Indian Tree pie.
42	Corvus splendenus	House Grow.
43	Corvus macrorthynohes	Jungle crow.
44	Tephrodorinis pndi cerianus	Common wood shrike back headed.
45	Coracina melanoptera	Cuckoo shtrike.
46	Aegithina tiphia	Common lora.
47	Pynotus cafer	Redvented bulbul.
48	Pycnonotus lutoolus	Whitebrowned Bulbul.
49	Turdoisea striatus	Jungle Babbler.
50	Orthotomus Sutorius.	Taler bird.
51	Erithacus brunneus	Blue chat.
52	Copychus Saularis	Maigpe Rohin.
53	Motacilla indica	Forest Wagtatil.
54	Hotachilla madaraspatensis	Largepied wagtail.
55	Anthus novacscelandise	Paddy filed pipit.
56	Dicacum crythrorhynchos	Tickell's flower pecleon.
57	Nectarinia neylonica	Purpole rumped subbird.
58	Nectarinia asistica	Purple sunbird.
59	Passer domestidus	House sparrow.
60	Petronia zanthcollis	Yellow throted sparow.

)*List of Migratory Birds coming to Point Calimere Sanctuary.*

ial Number.	Common Name.	Scientific name.	Country from which migrated.	Time of migration at Point Calimere.
(1)	(2)	(3)	(4)	(5)
1	Little Grebe	Podicaps ruficollis	India subscontinent	January.
2	Grey or spotted billied pelican	Pelecanus Phillippen sis (MR)	Sirlanka Breeds locally	
3	Indian shank	Phalacrocroax fuscicollis	Sri Lanka, Ladakh and Nepal	
4	Orey Heron	Ardea cimerea (MR)	Sri Lanka, Maldives Andamans	July.
5	Purple heron	Ardea purpurea	Sri Lanka, Andaman Nicobar	July.
6	Pond heron	Ardeola grayil	Lakshadeweep, Andaman Kashmir	December.
7	Cottle Rgret	Bulbulcus ibis	Sri Lanka, Madlive, Lakshadweep and Andaman	October.
8	Large Egret	Egretta alba	Nepal Andaman	February.
9	Little egret	Egretta Garzetta	Maldive, Andaman, Sri Lanka	January.
10	Indian Reef Heron	Egretta gularis (MR)	Pakistan western India, Sri Lanka	January.
11	Night Heron	Myctocorax nycticorax	Sri Lanka, Andaman Nicobar I.S. and Kashmir	February.
12	White necked stork	Ciconia episcopus	Sri Lanka Nepal	January.
13	Spoon bill	Platalea Leucorodia	Southern Europe	Octobes.
14	Flumingo (Greater)	Phonicipterus resecus (M.R.)	Pakistan, Nepal, Bangaldesh Sri Lanka	October.
15	Flamingo (lesser)	Phoeniconaias minor	Kutch, Pasitan, Rajasthan Chilka, Lanke	September.
16	Pin tail	Anus Acuta	Holaretic region	October.
17	Wigeon	Anas penelope	Palearetic region	February.
18	Garganey	Anasquerquedyla	Palearetic region	October.
1	Sho veller	Anas elypeata	Halarotic region	November.
20	India Blackcreasted Baza	Aviceda Leuphotes	Nepal, Indochines	January.
21	White syed Bazzard eagle	Butasturteasa	Sub region pakistan	February.
22	hikra	Accipiter badicues (M.R.)	Breeds Locally	July.
23	Sparrow Hawk	Accipiter nisus (MR)	Breeds Locally	October.
24	Besra sprrow Hawk	Accipiter Virgatus (M.R.)		
2	Egiption-Scavenger valture	Neophronpernoperus (M.R)		January.
26	Montaqu's Harrier	Circus phgarqus	Palacaretic region	February.
27	Pied Harrier	Circus melmoleucos	Eastern Asia	February.

28	Short toed eagle	Circaetus gallicus	Pelaearotic region	February.
29	Booted toed Eagle	Hieraacts pennatus	South Europe, Malya	January.
30	Kestrel	Falco pereyrinus	Holaretic region	November.
31	Peregnine Falcon	Faco pereyrinus	Holaretic region	October.
32	Bule breated Banded Rail	Rallus striatus	Indochinease sub-region	February.
33	Banded crake	Ralina ourizonoides	Do.	December.
34	White breasted waterhne	Amaurernis phoenicurus	India sub continet and Sri Lanka	December.
35	Moorhen	Gallinula choloroipus	Himalaya, Nilgiris	January.
36	Cyster catcher	Haematopus ostraleques	Halaractic region	September.
37	Grey Plover	Pluvilas squatatela	Do.	July.
38	Eastern Golden plover	Plurialis dominica	Eastern Asia, North America.	October.
39	Large Sandplover	Charadrius Iescheneultu	North Asia	October.
40	Lesser Sandpover	Charadrius mangolus (M.R.)	Ladakh, Kabul and Sikkim	July.
41	Whimbrel	Numerius Raceopus	Halaretic region	July.
42	Currlew	Numenis arquata	Palaearcic region	July.
43	Bartailed cedwit	Limosa Lappenica	Halaretic ren	October.
44	Black talied godwith	Limoda Limesa	Palaearetivc region	October.
45	Spetted or Dusky Red shank	Iringa Erythroupus	Do.	October.
46	Common redshank	Tringa Tetanus	Masspit, Lalshialank	July.
47	Marsh snadipiper	Tringa stagnat'is	Europe, Central Asia	July.
48	Green sank	Tringa nebularia	Palaer retic region	August.
49	Green sand pipper	Tringa Ochropus	Do.	December
50	Wood sand piper	Tringa glarcola	Do .	November.
51	Terkasandiper	Tringa terek	Finland east to Lake Baikal	August.
52	Common sand priper	Tringa hypoleuces	Palacaretic region Kashmir	September.
53	Turnstore	Avenaxia insterptes	Helarastic region	August.
54	Pintailsnipe	Gallinago stenurs	East siberia	December.
55	Knot	Calinris canutus	Halarctic region	October.
56	Eastern knot	Calindris tenuirestris	North Eastern Siberia	November
57	Sanderling	Calindrisalba	Halaretic region	February.
58	Little stint	Calidris minutus	Palaca retic region	July
59	Temminok s stint	Calindris temminckil	Scandinavia, Eugosian	November.
60	Long told stint	Calidris subminutus	East Siberia	

List of Migratory Birds coming to Point Calimere Sanctuary.

Serial number.	Common Name.	Scientific name.	Country from which migrated.	Time of migration at Point Calimere.
(1)	(2)	(3)	(4)	(5)
1	Little Grebe	Podicaps ruficollis	India subscontinent	January.
2	Grey or spotted billied pelican	Pelecanus Phillippen sis (MR)	Sirlanka Breeds locally	..
3	Indian shank	Phalacrocroax fuscicollis	Sri Lanka, Ladakh and Nepal	..
4	Orey Heron	Ardea cimerea (MR)	Sri Lanka, Maldives Andamans	July.
5	Purple heron	Ardea purpurea	Sri Lanka, Andaman Nicobar	July.
6	Pond heron	Ardeola grayil	Lakshadeweep, Andaman Kashmir	December.
7	Cottle Rgret	Bulbulcus ibis	Sri Lanka, Madlive, Lakshadweep and Andaman	October.
8	Large Egret	Egretta alba	Nepal Andaman	February.
9	Little egret	Egretta Garzetta	Maldive, Andaman, Sri Lanka	January.
10	Indian Reef Heron	Egretta gularis (MR)	Pakistan western India, Sri Lanka	January.
11	Night Heron	Myctocorax nycticorax	Sri Lanka, Andaman Nicobar I.S. and Kashmir	February.
12	White necked stork	Ciconia episcopus	Sri Lanka Nepal	January.
13	Spoon bill	Platalea Leucorodia	Southern Europe	Octobes.
14	Flumingo (Greater)	Phonicipterus resecus (M.R.)	Pakistan, Nepal, Bangaldesh Sri Lanka	October.
15	Flamingo (lesser)	Phoeniconaias minor	Kutch, Pasitan, Rajasthan Chilka, Lanke	September.
16	Pin tail	Anus Acuta	Holaretic region	October.
17	Wigeon	Anas penelope	Palearetic region	February.
18	Garganey	Anasquerquedyla	Palearetic region	October.
[illegible]	Sho /eller	Anas elypeata	Halarotic region	November.
20	India Blackcreasted Baza	Aviceda Leuphotes	Nepal, Indochines	January.
21	White syed Bazzard eagle	Butasturteasa	Sub region pakistan	February.
22	hikra	Accipiter badicues (M.R.)	Breeds Locally	July.
23	Sparrow Hawk	Accipiter nisus (MR)	Breeds Locally	October.
24	Besra sprrow Hawk	Accipiter Virgatus (M.R.)		
2	Egi...ion-Scavenger valture	Neophronpernoperus (M.R)		January.
26	Montequ's Harrier	Circus phgarqus	Palacaretic region	February.
27	Pied Harrier	Circus melmoleucos	Eastern Asia	February.
28	Short toed eagle	Circaetus gallicus	Pelaearotic region	February.
29	Booted toed Eagle	Hieraacts pennatus	South Europe, Malya	January.
30	Kestrel	Falco pereyrinus	Holaretic region	November.
31	Peregnine Falcon	Faco pereyrinus	Holaretic region	October.
32	Bule breated Banded Rail	Rallus striatus	Indochinease sub-region	February.
33	Banded crake	Ralina ourizonoides	Do.	December.
34	White breasted waterhne	Amaurernis phoenicurus	India sub continet and Sri Lanka	December.
35	Moorhen	Gallinula choloroipus	Himalaya, Nilgiris	January.
36	Cyster catcher	Haematopus ostraleques	Halaractic region	September.
37	Grey Plover	Pluvilas squatatela	Do.	July.
38	Eastern Golden plover	Plurialis dominica	Eastern Asia, North America.	October.
39	Large Sandplover	Charadrius lescheneultu	North Asia	October.
40	Lesser Sandpover	Charadrius mangolus (M.R.)	Ladakh, Kabul and Sikkim	July.
41	Whimbrel	Numerius Raccopus	Halaretic region	July.
42	Currlew	Numenis arquata	Palaearcic region	July.
43	Bartailed cedwit	Limosa Lappenica	Halaretic ren	October.
44	Black talied godwith	Limoda Limesa	Palaearetivc region	October.
45	Spetted or Dusky Red shank	Iringa Erythroupus	Do.	October.
46	Common redshank	Tringa Tetanus	Masspit, Lalshialank	July.
47	Marsh snadipiper	Tringa stagnat'is	Europe, Central Asia	July.
48	Green sank	Tringa nebularia	Palaer retic region	August.
49	Green sand pipper	Tringa Ochropus	Do.	December
50	Wood sand piper	Tringa glarcola	Do.	November.
51	Terkasandiper	Tringa terek	Finland east to Lake Baikal	August.
52	Common sand priper	Tringa hypoleuces	Palacaretic region Kashmir	September.
53	Turnstore	Avenaxia insterptes	Helarastic region	August.
54	Pintajlsnipe	Gallinago stenurs	East siberia	December.
55	Knot	Calinris canutus	Halarctic region	October.
56	Eastern knot	Calindris tenuirestris	North Eastern Siberia	November
57	Sanderling	Calindrisalba	Halaretic region	February.
58	Little stint	Calidris minutus	Palaca retic region	July
59	Temminok s stint	Calindris temminckil	Scandinavia, Eugosian	November.
60	Long told stint	Calidris subminutus	East Siberia	..

59-10-52

(*b*) LIST OF MIGRATORY BIRDS COMING TO POINT CALIMERS SANCTUARY—*cont.*

Serial number.	*Common name.*	*Scientific name.*	*Country from which migrated.*	*Time of migration at point calimere.*
(1)	(2)	(3)	(4)	(5)
61	Curlew sandpiper	Calidris testaceus	Northern Asia	August.
62	Dunlin	Caldrisalpinus	Holarctic region	August.
63	Spoon billed sand piper	Eurynorhynchus phmeum	Chuki peniunsula in Siberia	February.
64	Eroedbiled sand piper	Limicole falcinellus	Mediterranean and middle east	July.
65	Ruff and reeve	Philomochus pyngax	North Europe and West Siberia	July.
66	Red necked pharlorope	Phalaropus labatus	Holarctic region	September.
67	Black winged stilt	Himatopus himantopus	Europe Asia Australia	October.
68	Avocat	Recurvirostra absoseta	Europe, West Asia	October.
69	Crab plover	Drmos ardeola	Andaman, Nocobar	July.
70	Lesser black backed goell	Larus fuscus	Western and Northern Europe	December.
71	Brown headed gull	Larus brunnicphales	Central Asia	December.
72	Black headed gull	Larusridileundus	Palearetic region	February.
73	Whisked tern	Chillidonias byhirada	South Europe, Africa, Asia and Phillipines	July.
74	Gull billed tern	Gelochetidon	Nilotica, Europe, North Africa	August.
75	Caspin tern	Hydroprogne caspia	Astralia, Newzealand	October.
76	Common tern	Hydroprogne caspia	North Africa, Ladakh	August.
77	Large creasted torn	Sterna bergii	Pakistan, Kutch, Sri Lanka	October.
78	Orange breasted green Pigion	Treron bicincta	Lower Himalaya	December.
79	Redwinged creasted cuckoo	Clamstor coromerdus	Himalayan foot hills	October.
80	Red creasted cuckoo	Clamator Jacopineus	Breeds locally	November.
81	Brain fever bird	Cuculus vrius	Pakistan, Jammu, Rajasthan	September.
82	Indian plain live cuckoo	Cacomautin merutinus	Butan, West Bengal, Assam	September.
83	Koel	Eudynomings scolpacea	Breeds locally	October.
84	Short cred owl	Asio Flammeus	Hoalrctic region	December.
85	Black capped king fisher	Halacyon pilctay	Bangaladesh, Indian West to Bombay	January.
86	Chestnut headed bee eater	Merops leschenaulti	Eastern, Western gates	October.
87	Blue tailed bee eater	Meraps phillipinus	Central India	October.
88	Wry neck	Jynx tequilla	Pakistan, Nepal, Kerala	Febaruty.

89	India Ritta	Ritta brachyura	Foot hills of Himalyas	October
90	Swallow	Hirundo rustica	Pakisthan, Ladakh, Kashmir	September
91	Indian Cliff Swallow	Hirunde fluvicala	Jammu, Kashmir, Panjab, Haryana	October
92	Golden oriole	Orielus Oriolus	Ladakh, Kashmir and Bihar	December
93	Brown shrike	Laniuscristatus	Sri Lanka, Kerala	September
94	Grey or) Ashy Drango	Dicrurus leucophaeus	NWFP, Kashmir, Kerala	October
95	Grey headed Myna	Sturnus malbricus	Foot hills of Himalaya	November
96	Brahminy myna	Sturnus pagdaıum	Pakisthan, Kashmir, West Assam	September
97	Rosy paster	Sturnus reseus	South East Europe, Western Siberia	January
98	Black headed cuckoo shrike	Gracina Mcleuoptera	Himalayan district	October
99	Brown ply catcher	Musicapa latirostris	Himalayan foot hills	September
100	Brown brested fly catcher	Muscikaper Mutti	Megalaya, Assam	October
101	Blue threated fly catcher	Muscicapa rubeculoides	Eastern Himalaya	October
102	Paradise fly catcher	Terpsiphare paradise	Uttar pradesh, Lucknow, Kashmir	August
103	Blacknaped fly catcher	Monarcha azurea	Uttar pradesh, Gulf of Kutch, Palani hills	No
104	Thick hilled warbler	Phragamaticola aedon	Worth eastern India	October
105	Blyths read warbler	Acrocephalus dumatorum	Baluchistan	October
106	Paddy field warber	Acrocephalus agricola	Baluchistan	October
107	Bocted warbler	Hippolais caligata	Nepal, Madhya Pradesh	February
108	Lasser white throat	Sylvia cunuca	Western Himalaya, Nepal	October
109	Largebilled leaf warbler	Phylloscopus magmirateris	NWFP, Arunachala Pradesh	September
110	Dull green leaf warbler	Phylloscopus trenchiloides	Kashmir, Nepal, Sikkim	October
111	Blue chat	Erithacus brunncus	Kashmir, Butan, Sikkim	September
112	Pied ground thrush	Zoothera wardii	Butan, Arunachala Pradesh, Assam	October
113	Cauge headed ground thrush	Zoothera Citrinietie	Himalayas, Butan, Arunachala Pradesh	October
114	Forest Wagtail	Motacilla Indica	Cachandt Assam	September
115	Yellow Wagtail	Motacilla flava	Gangetic plains	September
116	Black headed Munia	Lenchura Malacca	Himalayan districts, Uttar Preadesh, Bihar	August
117	Rose finch	Carpedeus erythrinees	Ladakh, Kashmir, Lahur	January

NOTE.— MR—Migratory residence with breeds locally.
Palearctic region—Includes Eeerasia above the tropis with the North eastern corner of Africa.
Nearotic region—Includes North Africa except the tropical part of Mexico.
Halarctic region—Both palarctic and Nearctic regions together from this region.

APPENDIX IV.

LIST OF ANIMALS FOUND IN THE POINT CALIMERE SANCTUARY.

1	The Bennet Macaque	MACACA RADIATA
2	The Jungle cat	FELIS CHAUS
3	Civet cat	VIVERRICULER INCLICER
4	The Hackal	CANIS AUREUS
5	Bat Sp.	— —
6	Stripped quirrel	FUNABULUS (PALMARAM)
7	Rat sp.	— —
8	The Indian Hare	LEPUS NIGHRIOLLIS —
9	The Chittal	AXIS AXIS
10	The Indian Wild Bear	SUS SENOFA
11	The black buck	ANTILOPE CERVI CARFA
12	The Common Delhin	DELHINUS DELPEIS
13	The Common Mangoose	HERFESTAS EDWARDSC.

APPENDIX V.

DETAILS OF TOURISTS WHO VISITED POINT CALIMERE WILD LIFE SANCTUARY.

Serial number and Name of Visitor. (1)	*Date of visit.* (2)
1 Mr. C. Ratcliffe, Fisheries Adviser, FAO/UNDP, Sri lanka.	4th July 1977.
2 Mr. A. Andras son, Fisheries Adviser, FAO/UNDP, Sri lanka.	5th July 1977.
3 Mr. A. R. Copper, Economist, FAO/UNDP, Sri lanka	5th July 1977.
4 Mr. Ramamoorthy, Assistant Director of Fisheries, Information and Statistics, Madras-6.	4th July 1977 and 5th July 1977.
5 Mr. M. Rajagopalan, Scientist, Central Marine Fisheries Research Institute, Madras.	15th October 1977 to 19th October 1977.
6 Mr. P. Gurutner, FAO/UNDP, Rome	30th October 1977 and 31st October 1977
7 Mr. P. K. Vedanayakam, B.E., Chief Engineer, PWD, Madras.	8th February 1978 to 10th February 1978.
8 Mr. S. M. Chari, Joint Director of Fisheries, Madras	16th February 1970.
9 Mr. P. K. Varki, Superintendent of Salt, Deputy Salt Commissioner's Office, Madras-6.	24th April 1978 and 25th April 1978.
10 Major General Raja, Vice-President, I.R.S., Madras	22nd May 1978 and 23rd May 1978

APPEDIX V—*cont.*

Details of Tourist who visited Point Calimere wild liff Sanctury

	(1)	(2)
11	Mr. T. Jeyadev, I.F.S., Chief Conservator of Forests, Madras	12th June 1978 and 13th June 1978.
12	Capt. D. T. Ramachandran, State Fort Officer, Madras ..	14th June 1978.
13	Mr. K. Rengarajan, Scientist, Central Marine Fisheries, Research Institute, Madras.	27th June 1978 to 28th June 1978.
14	Mr. K. A. Bhoja Shetty, I.F.S., Chief Conservator of Forests, Madras.	16th July 1978 and 17th July 1978.
15	Mr. S. A. Rahamatullah, I.F.S., Chief Wild Life Warden, Madras.	Do.
16	Mr. P. Soundarapandian, District Forest Officer, Thanjavur.	Do.
17	Mr. Raymond Zanos, 18, Wellington road, Warranambool, 3238, Victoria, Australia	12th March 1978 and 13ht March 1978.
18	Mr. Hendry Frederic, Hiyr. Fonteraliers, France ..	13th September 1978 to 15th September 1978.
19	Mr. R. Lakshmipathy, B.A., Secretary (Agriculture), Thanjavur.	23rd September 1978 and 24th September 1978.
20	Mr. & Mrs. U.N. Naik, New Delhi-110041	27th September 1978 to 30th September 1978.
21	Mr. A. Karikalan, M.Sc., A.I.F.C., Principal, Tamil Nadu Forestry, Training School, Vaigaidam.	9th November 1978 to 11th November 1978.
22	Mr. Iain S. Taylor, 22, Kingehil Dr., Scotland	17th November 1978 to 23rd November 1978.
23	Mr. Richard Menefy, Varganai, Newzeland	17th November 1978 to 23rd November 1978.
24	Mr. Messemin Francis, 34, Grande Ve 16140 Higre, France.	20th November 1978 to 5th December 1978.
25	UWE Kalement, Ahornalee 43, 7000 Berlin 79	30th December 1978 to 4th January 1979.
26	M. Christina Legan, 30, Magnolia RD, Chiseic , London-4	30th January 1979 to 1st February 1979
27	Mr. Uboidr Hachanberg, Portinall 10 Rachier, West German.	22nd January 1979 to 23rd January 1979.
28	Mr. S. Koodiner, Clevelad, Australia	10th February 1979 and 11th February 1979.
29	Mr. Meenakshi Sundaram, M.L.A.	28th February 1979.
30	Mr. A. Krassai, Basel, Switcherland	28th February 1979
31	Mr. Tivian and Walter Krawtec, Chicago, Illinois, U.S.A.	23rd March 1979.
32	Mr. Risl Peter, 2353, Guntramadorg, RUD-Heinteshel STR Australi.	23rd April 1979 to 25th April 1979.

	(1)	(2)
33	Deputy Director of Pre-investigation, Survey of India, Bangalore.	27th April 1979.
34	Mr. R. Pasupathi, I.A.S., Chief Conservator of Forests, Madras.	1st May 1979 to 2nd May 1979.
35	Mr. G. Rajasingh, I.F.S., Conservator of Forests, Tiruchirappalli.	1st May 1979 to 2nd May 1979.
36	Mr. V. Chelladurai and Party, Survey of Medicinal Plants Unit, Government College of Indian Medicine, Palayamcottai-627 002.	5th May 1979 to 9th May 1979.
37	Hon'ble Thiru K. Kalimuthu, Minister for Local Administration, Government of Tamil Nadu.	5th June1979 to 15thJune 1979.
38	Mr. V.R. Subramaniam, M.L.A., Chairman, Estimates Committee.	8th August 1979.
39	Mr. Durai Govindar , M.L.A.	Do.
40	Thiru D. Venugopal, M.L.A.	Do.
41	Thiru V. R. Periananan, M.L.A.	Do.
42	Thiru P. N. Thomas, M.L.A.	Do.
43	Thiru V. Kittappan, M.L.A.	Do.
44	Thiru R. Vijayaraghavan, M.L.A.	Do.
45	T. Jambulingam, Chief Wildlife Warden, Coimbatore ...	13th August 1979 to 16th August 1979.
46	Dr. V. Angamuthu, Chief Medical Officer, Government Hospital, Mayuram.	11th ugust 1979.
47	Thiru W.P. Durairaj, I.F.S., Wildlife Warden, Madras ..	13th August 1979 to 16th August 1979.
48	Mr. C. Edmandson, 42, Hanovar GDWS, London SE II, United Kingdom.	17th August 1979 to 18th August 1979.
49	Mr. Michel Hearns, Leedd, England	25th August 1979 to 27th August 1979.
50	Mr. S. A. Hussain, Research Associate, Bombay Natural History Society, Horabil House, Bombay.	18th October 1979 to 21st Octob-r 1979.
51	Mr. Robert B. Grabh and Mr. P. B. Shokar and Mr. Shroff, Bombay Natural History Society, Nature Camp participants.	21st October 1979 to 28th October 1979.
52	Mrs. C. Dave, Bombay Natural History Society	28th October 1979 to 8th November 1979.
53	Mr. W. S. Parelkar and Mrs. S. Parelkar, Bombay Natural History Society.	Do.
54	Mrs. J. C. Shaba, Miss N. Shabha B.N.H.S.	Do.
5	Mr. Kalid Ali, C/o. B.N.H.S., Bombay	8th November 1979 to 13th November 1979.

(1)	(2)	(3)
56	Bolatorff Wolfgang Claudigaster 87 2,000 Ramburg 70 West Germany.	18th December 1979 to 19th December 1979.
57	Mr. TENTELOFF CLAUS	6th January 1980 to 7th January 1980.
58	SCHNRSOW KURT 1,000 Berlin, Germany	Do.
59	Mr. Silen and Hans, Snel. Chechi, Holland	31st January 1980 to 2nd February 1980.
60	Mr. & Mrs. Caresse Carnele C/o. Pukengaby School, Newzeland.	7th February 1980 to 10th February 1980.
61	Mr. Peter Stegohamn, Lindenallse H.O. 2 Hamburg, 19, West Germany. ..	25th February 1980 to 29th February 1980
62	Mr. W. Sohimi students, Berlin, West Germany	13th February 1980.
63	Mr. S. T. Well Luzembourg	2nd March 1980 to 4th March 1980.
64	Mr. Matheson, 136, Walton street, Oxford England ..	3rd March 1980 to 4th March 1980.
65	Dr. Elizebeth cary, Mungall, California	4th March 1980 to 1st April 1980.
66	Mr. V. Ganesan, B.A., District Forest Officer, Thanjavur.	10th March 1980 to 12th March 1980.
67	Mr. V. S. Velayudham, Secretary, Wild life Conservation Society, Tiruchirapalli-2.	16th March 1980 to 17th March 1980.
68	Dr. Robert Crurbsh and Mr. S. A. Hussain, Bombay Natural History Society.	29th March 1980 to 31st March 1980.
69	Mr. J. C. Daniel B.N.H.S.	Do.
70	Dr. Dalim Ali	Do.
71	Prof. K. K. Nilakantan	29th March 1980 to 15th October 1980.
72	Mr. V. S. Sureshkumar	19th March 1980 to 5th April 1980.
73	Mr. A. W. Fraser, 9, Jutland Pdl Amekith, North W. AVST-6009.	11th May 1980 to 13th May 1980.
74	D. Sundaresan, I.A.S., District Collector, Thanjavur ..	16th May 1980 to 17th May 1980.
75	Mr. J. C. Daniel, Curator, Bombay Natural History Society.	23rd May 1980 to 24th May 1980.
76	Mr. P. Baskaradoss, I.F.S., C.W.L.W., Coimbatore ..	5th June to 8th June 1980.
77	Mr. H. S. H. Hussiny, Bilogist	13th June 1980 to 15th June 1980.
78	Mr. Johanna Portsch. 3, Hamburg, A9, Doormannsweg-22.	30th July 1980 and 31st July 1980.
79	Mr. Laura Saintati, via. S. Francesco 190 35100 Padova ...	30th July 1980 to 31st July 1980

(1)	(2)	(3)
80	Miss. Rani Singh, Zoological Survey of India, Calcutta ..	29th August 1980 to 31st September 1980.
81	Mr. L. C. P. Raja, Director C.G.W.B. Government of India, Hyderabad.	7th September 1980.
82	Mr. Rajesh Badi (Photo Journalist), L6, Rajouri Garden, New Delhi-11027.	18th December 1980.
83	Mr. Mohan Varghese Chunkath Sub-Collector, Mannargudi.	13th December 1980.
84	Mr. Richard Alan Paotride, 34, Florence street, London MW4 UK.	16th December 1980.
85	Mr. N. Rajagopalan Scientist Central Marine Fisherise, Research Institute, Madras-105.	18th December 1970.
86	Mr. Terence John Orifiths Chesil end, New road, Partland Dores UK.	17th December 1980 to 19th December 1980.
87	Mr. Chauver Jean Mane, 39, Vue de la Tenneric Trieans, France.	20th December 1980 to 22nd December 1980.
88	Mr. V. J. Rajan, Hon-Secretary, Madras Naturalists Society, 13, Aylurmutia Mudali Street, Madras.	25th December 1980 to 28th December 1980.
89	Mr. T. Achayam, I.F.S., C.C.F., Madras-4	30th December 1980 and 31st December 1980.
90	Mr. K. K. Somasundaram, I.F.S., W.L.W., Madras-20 ..	30th December 1980 and 31st December 1980.
91	Mr. Declecer Nichol, Ooiecearslamn-8 Knolkke Legion ..	11th January 1981 to 20th January 1981.
92	Mr. J. Mangalraj Johnson, W.L.M., Kalakad Sanctuary, Tirunelveli-11.	16th January 1981 to 19th January 1981.
93	Mr. P. Ramachandran, W.P.O., Tiruchirappalli	20th January 1981 to 21st January 1981.
94	Dr. Richard Goranson, 234, Cranbrooke A.V.O., Toronto, Canada.	27th January 1981 to 31st January 1981.
95	Mr. Enaut Lac, 23, Avenue, La velloe 44700 Orvalute, France. ..	1st February 1981 to 2nd February 1981.
96	Mr. Waraki Sakairai OHI Shinagawa, Tokyo, Japan ..	2nd February 1981 to 3rd February 1981.
97	Mr. S. Sivalingam, I.F.S., CF. W.P. Circle, Tiruchirappalli.	1st February 1981 to 2nd February 1981.
98	Mr. Jan Hanson, Markellent 10, 2720, Denmark	6th February 1981 to 7th February 1981.
99	Mr. Icysthia alias french 302 MW AVE APT 157 Plantation Florida 33317 U.S.A. ..	15th February 1981 to 17th February 1981.
100	Mr. Ban King, New York, U.S.A.	1st February 1981 to 17th February 1981.

	(2)	(3)
101	Elizeb.th Jol Winglie Hidecin Quibeck, Canada..	15th February 1981 to 17 February 1981.
102	Mr. R. Henninger 24 Ren KK Reourrean Strasbourg France	24th February 1981 to 25 February 1981.
103	Mary Sheikisnon 72, Lochinvar Road, San Reajail California, U.S.A.	15th February 1981 to 17th February 1981.
104	Mr. Slooff KR. A. Ussel The Netherlands ..	17th March 1981 to 18th March 1981.
105	Mr. C. Venugopal, I.F.S., C.F. W.P. Tiruchirappalti	19th March 1981 to 21st March 1981.
106	Thiru K. N. Natarajan, Wildlife Conservation Society, Tiruchirapplli.	20th March 1981 to 22nd March 1981.
107	Mr. and Mrs. T. Wermer, Mumchemer str 9, 8152 Mugem F.R. Germany.	17th April 1981 to 19th April 1981
108	Mr. Muller German expert, Germany..	23rd April 1971 to 25th April 1981.
109	Sadeivey, German expert, Germany	14th June 1981 to 15th June 1981.
110	Mr. N. Balusamy, Tourist Officer, Tiruchi ..	11th August 1981 to 12th August 1981.
111	Mr. Berhard Distler Streherg 757 8557 Wieserttai, West Germany.	17th August 1981 to 18th August 1981.
112	Mr. Jagdip Singh, Wildlife Inspector, Amristar (Punjab)	9th August 1981 to 9th August 1981.
113	Mr. Greg Gee Ocana S.F. Green Pt., Australia	21st Spetember 1981 to 22nd September 1981.
114	Mr. Kaupad Goryens, 42, Chriaveson, East Germany	6th November 1981 to 7th November 1981,

APPENDIX VI

List of Trees and Herbs found in the Point Calimere Sanctury.

Serial numder.	*Botanitcal name.*	*Tamil name.*
(1)	(2)	(3)
1	Abrus precatorins linn	Kundumani
2	Acacia arabia willd	Karuvel
3	A. Planiterons W. and A.	Odaivel
4	Acalypha indice L	Kuppaimeni
5	Achranthes aspera L	Natyruvi
6	Adhatoda vasica nees	Adathodai
7	Aeluropus lagopides (L) Trin	Uppu Pull.
8	**Acrva enetajues**	....
9	**Ailanthus excelsa ribx**	Peenari
10	**Albizzial ebbec Benkth**	Vagal

Serial number. (1)	Botanical Name. (2)	Tamil Name. (3)
11	Allophylus serratus Radih	....
12	Alysicarpus SP	Alinji
13	Anisomelas malabarica R Br.	....
14	Anonx aquamosa	Seetha
15	Arganone mexicana L	Piramathalai
16	Asparague racemosus wild	Thanner vittan Kilangu
17	Astracntha longiolia nees	Neer Mulli
18	Asyatasia gangetica T And	Pasathikeerai
19	Atlantia monophylia corr	Kattu eluminchais
20	Avicemnia officialis L	Alayathi
21	Azadirachta indica A Juss	Vembu
22	Azima tetrcacentha Lam	Sangu Chedi
23	Blastania garcinil cogn	Nibar
24	Blames sp	....
25	Boerhaavia Diffusa L	Mukkurattai
26	Borassus Flabeilifer L	Panai
27	Borrerihispida K. Seh.	....
28	Breynia rhamooides M Arg	Poola
29	Calophyllum inophyllum L	Pinnai
30	Calotrophys giganthela R Br	Erukku
31	Canavalia virosa W. and A.	Kattukatarai
32	Cansjera rheedii omel	....
33	Caparia sp	Senathar i
34	G Zeylanuica L	Thandai
35	Cardiosperumum halicacabym	Mulakathan
36	Carissa spmarum L	Sirukilai
37	Casia auriculata L	Avarai
38	C. Pistula L	Kontrai
39	C. Occidentalis L	Nattu Nilvagai
40	C occidentalis L	Thagarm
41	Cassyna filiformis L	Agayavallis
42	Casuarina enquisetofloia	Svukku
43	Cisus rependa vhai	....
44	Ciseus quadrangularis L	Pirandi
45	Cissus rependa vhi	....
46	Citrallus vulgaris schard	....
47	Cleeome viscosa L	Naiveli
48	Clerodendron inereme Gueeta	....
49	Olitoria Torantea L	Kakaratta
50	Coccinia indica W. and A.	....
51	Cocos mucifera L	Thennai
52	Commeiina sp.	....
53	Cordia rothi room and Sep.	Ottupalam.
54	Craltaeva religiosa forest	....
55	Cress oretica L	....
56	Crotalaria striata Dc.	....
57	Crotalaria verruocca L	....
58	Craten spariciflourus Mor	....
59	Cynoden dactylon pers.	....

Serial number (1)	Botanical Name (2)	Tamil Name (3)
60	Cyperus sp.	....
61	Cyperus bullosus	....
62	Dichrestachya cinera W. and H.	....
63	Dioscorea sp.	Vallikilangu
64	Dodonea viscosa L	....
65	Dolichos so.	Kattumochal
66	Drosera buraanii vahi	....
67	Ehretia michrphylla lam	....
68	Enicestomma litteal Bl	....
69	Euciyptus glabulus Labill	....
70	Euginea jambolana lam	....
71	Eupherbia birta L	....
72	Eupherbia antiquorum L	....
73	Evolulus slsinoides L	....
74	Exceecardrin agallocha L	....
75	Ficus bengalensis L	....
76	Flugge leucopyrus willd	....
77	Geniesporum prostaratum benth	....
78	Gloriosa superba L	....
79	Glycosmis cochinchinensis perrce	....
80	Gmelie asistica L	....
81	Gymmosporia emerginata lane	Thelkodukku
82	Helitropicum curassacoue L	....
83	Heimicyclia spiaraia W. and A.	....
84	Hemmidemmus indicum R Br.	....
85	Hugonia mysta L	....
86	Inchrocarpus fortescene R Br.	....
87	Indiforea asplatheirdes Vahl.	....
88	Indigofora enneaphylia L	....
89	Indigofera tinotoria L	....
90	Iondius suferuticensus gind	....
91	Isnea obcura K Gawal	....
92	Isoma parvilora vhal	....
93	Igora sp.	....
94	Jasminum aritioulatum vahl	Malli (Kattu)
95	Jatrphs taneerensisis	....
96	Justicia procumbens L	....
97	Lirganeli reticalata spill	....
98	Launsa pinnatifida ocss.	Malli (Kattu)
99	Lawsonia alba Lam	....
100	Laxisanthes tetraphylla radik	....
101	Louces albe Lam	....
102	Lippia nodflora mrh	....
103	Lochenra rosea reichb	....
104	Loranthus sp.	....
105	Larthus sp.	....
106	Memba buxoeoliafpers	Thuvaral
107	Manilkara hexandra (Roxb) dub	....

Serial number. (1)	Botanical Name. (2)	Name. (3)
108	Maradenia Volubills T. Coks	....
109	Martynia annua	....
110	Maytenus marginata (Wild Binogattou)	....
111	Melothria heterphylla egn.	....
112	Memecyon umbellatum byrm F	....
113	Mollugu corviana ser.	....
114	M. Pentaphylia	....
115	Memordica diocica Rbox	....
116	Mucuna pruirita Hock	....
117	Nicotinana tabacum	....
118	Ocimum Sanctum	Thulasi
119	Odina wodier Roxb	....
120	Olax neandens roxb	....
121	Opuntia dillenil Hx	Chappathi kalli
122	Pandnus tectorium soland	....
123	Pavetta indica L	....
124	Pedalium marex L	....
125	Pentatropis micrphylla W. and A.	....
126	Pergularia extensa NEBr.	....
127	Phassolus trilebus Air	....
128	Phoenix tarinigera Roxb	....
129	Phyllenthum miruti L	....
130	Rullanthus zotindiflous	....
131	Pithooelobium spincsum	....
132	Peces erumum spincsus	....
133	Plectronie didna kugx	....
134	Pleurestypaiwightil W. and A.	....
135	Poycarpaes diffusa W. and A.	....
136	Pongummia gabra vent	....
137	Portulaca elercoea linn	....
138	Premna intgrifolia linn	....
139	Prespes julifora	....
140	Randia dumetrocrum Lam	....
141	Randia malabanica Lam	....
142	Rivea ornata chosiy	....
143	Salacia Chinensiss	....
144	Salicornis brachiata Roxb	....
145	Salvadora persica	....
146	Sasevicra Texbrghianna schuit P.	Kattukathiai.
147	Sapindus emarginatus Vehl.	....
148	Sarcestomna orevistiga W. and A.	....
149	Soutica myritina Kuzr	....
150	Sesanum indicum L	....
151	Solanum memorangena L Var Insarum Per	Kattupathiri
152	Solanum nigrum L os	....
153	Solamum tailobatum L	....
154	Solamum torvum SW.	....

Serial number.	*Botanical Name.*	*Tamil Name.*
(1)	(2)	(3)
155	Solamum xanthocrpusm sch and Vendl.	....
156	Spinifex littrreuis Mers.	....
157	Saseda martima-dum	....
158	Tamarindum indica L	Puli
159	Tephrosia popurea pers.	Kolinji
160	Thespesia populens Acv.	Poovarasu
161	Tincepora cordifolia miers Tinoepora sinsonls meril ..	....
162	Toddila asiatics Lam	....
163	Tranthema portulacastrum L	....
164	Tribulus terreestris L	Nerinji Mullu
165	Tylophora asthamatica W and A	....
166	Vmda tessellata H	....
167	Venonia cinerea Less.	....
168	Vitex neguuds L	....
169	Zizyphys cenoplia mill –	....
170	Zizyphus zylophyarue willd.	....
171	Zerina diphylla per·	....